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**MODELING CHOICES OF CHILD LABOR MIGRATION AND SCHOOLING IN BENIN:
INCENTIVE, CONSTRAINT OR AGENCY?
A MULTINOMIAL LOGIT ANALYSIS**

Anne Kielland

Hovedoppgave i Statsvitenskap
Universitetet i Oslo, Institutt for Statsvitenskap
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This thesis is based on the great collaboration I had with Roger Ouensavi in Benin in 2000. Ouensavi was the leader of the NGO *Carrefour d'Ecoute et d'Orientation* (CEO), while I represented the World Bank as a technical advisor. Supervised by the central statistical agency in Benin, INSAE, we designed the child relocation survey, and wrote a baseline report that would inform the social protection strategy under development in Benin. I want to thank Roger for teaching me so much, and for his inspired coordination of the data collection.

The unique dataset collected was primarily used to identify risk areas for suspected child trafficking, and to get an overview of the magnitude of the phenomenon. It has not yet been subjected to a more sophisticated statistical analysis, placed within the context of current theoretical and empirical research on child labor. This is what this thesis sets out to do.

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Index

Executive summary.....	1
1. Introduction.....	3
1.1 Child labor migration in Benin.....	4
1.1.1 Basics on Benin	4
1.1.2 Child fostering in Benin	5
1.1.3 Child labor in Benin	6
1.1.4 Child labor migration in Benin.....	7
1.2 Why study child labor migration?.....	8
1.3 Relevant research references	13
1.3.1 Child labor and schooling.....	14
1.3.2 Child labor and poverty	16
1.3.3 Child labor and agency	19
2. Theory	26
2.1 Central definitions	27
2.1.1 Child labor	27
2.1.2 Child trafficking	29
2.1.3 Migration	30
2.1.4 Child labor migration.....	31
2.2 Model specifications	32
2.2.1 Three central hypotheses: Incentive, Constraint and Agency	32
2.2.2 Other important factors.....	35
3. Method	38
3.1 The dataset.....	38
3.2 Operationalizing the dependent variables	39
3.2.1 The child migrant.....	40
3.2.2 The child labor migrant	42
3.2.3 The schoolchild.....	46
3.2.4 The “neither” child	46
3.3 Defining the independent variables.....	47
3.3.1 Incentive	47
3.3.2 Constraint: Defining wealth	49
3.3.3 Constraint: Wealth measurements and endogeneity.....	53
3.3.4 Factors affecting constraint	59
3.3.5 Agency	61
3.3.6 Information	62
3.3.7 Socio-cultural and demographic factors	62
3.4 Regression model	63

4. Analysis.....	64
4.1 Incentive	67
4.1.1 Incentives to work around own households	67
4.1.2 Incentives to labor migration.....	72
4.1.3 Incentives to schooling	74
4.2 Constraint	75
4.2.1 Wealth.....	75
4.2.2 Credit	78
4.3 Agency.....	82
4.4 Information	86
4.5 Socio-cultural and demographic factors.....	87
5. Conclusions and policy recommendations.....	89
5.1 Findings	90
5.2 Some possible explanations	93
5.3 Policy implications.....	96
5.4 Recommendations for further research	100
References	104
Endnotes	108

Executive summary

Most empirical studies of the child labor versus schooling choice ignore a common third option in Africa: to send a child away from the household to work elsewhere. The reason for this shortcoming is that most datasets are based on household surveys which only provide information on members living in the household at the time of the interview. An important part of the child labor choice, the decision to send a child away to work, is therefore generally ignored in ordinary survey-based studies. This thesis adds to the existing child labor literature by focusing on the child labor migration choice. The dataset used contains information about all children born from the same mother and include their current location and schooling status, as well as the motive they had for leaving.

Child labor migration is an important social policy issue in West Africa. The practice is common throughout the region and the children involved tend to be even more vulnerable than other child workers because they leave the social safety nets of family and kin behind. In many West African countries, the phenomenon is indiscriminately labeled as child trafficking, but this may be a misrepresentation of the situation of many supposedly trafficked children, as the motivation, dynamics and conditions may vary greatly from one case to another. As a result, numerous anti-trafficking projects have been based on poorly documented and unwarranted assumptions about the determinants of the practice, and they have until now been largely ineffective.

The model applied to analyze the determinants of child labor migration in this thesis is based on three hypotheses for explaining child labor, as proposed by Bahlotra and Tzannatos (2003): weak **incentives** to schooling relative to work options, (binding) poverty **constraints**, and limitations to parental (or **agent**) altruism. The three potential explanations have different policy implications. The first would call for improving incentives to education (**education policy**),

the second suggests **social policy** interventions, while the third would give legitimacy to **legal** measures such as sanctions. What would be an adequate mix of these policies? By applying a multinomial logit model to data from Benin, indicators for the three hypotheses are tested while controlling for cultural and demographic factors.

The results of the analysis only partially support the theory. Incentive structures to local labor and schooling turn out to function more or less as expected relative to the schooling choice, but not to the child labor migration choice. While poverty has the expected impact on increasing the labor migration of girls, this is not the case for boys. Credit availability was expected to relax poverty constraints, but instead appears to have other functions vis-à-vis the child labor migration choice. Features of the child's agents matter but not systematically in accordance with the theory. The fact that better educated mothers have a higher propensity to send their daughters away to work and better educated household heads a higher propensity to send their sons do raise some questions as to the possible limitations to parental altruism, since ignorance in their case is harder to blame. But it also raises the question of whether (all) child labor migration is as bad as assumed, at least relative to the options the child has if staying at home.

The mere complexity of the results should serve as a warning against jumping to intuitively appealing but not scientifically supported conclusions on how the problem could be addressed. In this sense, it would be advisable to bring up some of the issues raised by the research results in a dialogue with communities at risk. The thesis concludes by offering suggestions on how to define further research in a way that helps clarify some of the core questions raised by the study. Based on the lessons from the local dialogue and the results from a second survey, a more adequate policy to prevent the harmful aspects of child labor migration can be defined in the future.

1. Introduction

Every day a large number of West African children leave their rural families in search of work. They travel by public cars, by boat, and by foot. They go to districts where there is paid work in cash crop production, to the cities, or to prosperous neighboring countries like Cote d'Ivoire, Nigeria and Gabon. Some leave with a parent or a relative, other family acquaintances, or friends and perhaps siblings. Some leave alone, at times without the consent of parents and guardians. Some have used the bargaining powers they may have to get the permission to go. Others are forced to leave against their will. While many return after the harvest season, others will return after the years it took them to earn their dowry or to learn a craft, or settle more permanently at the destination site. And there are those that will never be heard from again.

Sometimes there has been an intermediary who convinced either the child or the family that a prosperous job is waiting for him or her in the city or on a commercial farm. Many adventurous children who leave alone or with siblings and friends also run into intermediaries of some sort along the way: middlemen or good helpers – adults who to a greater or lesser extent benefit from facilitating for the child's relocation and job search.

While some do indeed turn out to have migrated to a better life, welfare consequences are serious for most child migrants. The world is not that easy to navigate for someone young and inexperienced who has seen little other than his or her own village and the local market town, and who has not met people other than local traders, own relatives and kinsmen. Rural children separated from close family and kin are vulnerable and easy to take advantage of. They have poor negotiation skills and rarely any bargaining power when jobs and labor conditions are to be negotiated. Even adults and kinsmen who might travel along may have limited bargaining powers since they are themselves

vulnerable while away from their domestic social networks. As a result, child migrants are often exploited or even right out tricked into working for nothing or accepting gross abuse. The consequences for a child who is in a process of physical, moral and emotional development can be long term and damaging.

Why do families allow their children out on such risky enterprises, and why do children themselves decide to leave? Rural poverty is the dominant explanation in NGO publications as well as government expositions: child labor migration is seen as a crisis coping mechanism for families in temporary or permanent distress. The children presumably leave poor communities where there are few opportunities for them to aid their destitute families.

Is the explanation really that simple? Is acute crisis really the main trigger for a choice that would not have been made under other conditions? Recent publications have indicated that several social as well as cultural mechanisms may be equally important for the child labor migration decision. This thesis aims to test the poverty hypothesis in the context of other potential determinants.

1.1 Child labor migration in Benin

1.1.1 Basics on Benin

Benin is a small country in African terms, situated between Togo and Nigeria on the West African south coast. With a relatively short coast line it stretches towards the Sahel, and the climate changes from humid to dry as one goes north. The country is poor, but for the last decades, politically stable. The population is composed by a variety of ethnic groups, and while Animism still dominates in the rural areas, Christians are found mainly in the south and Muslims in the north. Table 1.1 shows some background figures of relevance to this thesis.

Table 1.1 Core figures for Benin in comparison to West Africa and Sub Saharan Africa.

	<i>Benin</i>	<i>West and Central Africa</i>	<i>Sub Saharan Africa</i>
GNI per capita (USD)	510	491	764
Percent of population under \$1 per day	31	54	46
Ec growth 1990 / 2005	1.4	1.0	1.1
Population	8,4	357,3	713,4
Under 5 mortality rate	150	190	169
Life expectancy	55	46	46
Adult literacy rate	35	49	62
Primary school attendance rate boys	60	59	63
Primary school attendance rate girls	47	52	59
Secondary school attendance rate boys	19	26	21
Secondary school attendance rate girls	12	22	20
HIV/AIDS rate	1.8	3.5	6.1
Official child labor rate 5-14-year-olds	26	42	37

Source: State of the World's Children 2007

Benin has a fairly normal GNI per capita for an African context where a few exceptional countries contribute to a somewhat high average. Income distribution is better than general, and growth a bit above normal. This “slightly above normal” level is also reflected in a lower child mortality rate and a higher life expectancy, but not in the area of education. The adult literacy rate is low, and both primary and secondary school enrollment rates are in general lower than the Sub Saharan African average. Gender differences in education are also sharper than typical in Africa. The official child labor rate for Benin is of only 26 percent, but there is reason to believe that the estimates are too optimistic. Neighboring and socio-culturally fairly similar Togo, for example, has an official child labor rate of 63 percent in spite of far higher enrollment rates.

1.1.2 Child fostering in Benin

The circulation of children is considerable in Benin, also in comparison to other countries in the region. Table 1.2 shows that between 1.5 and 1.9 percent of children 0-2 years old who have at least one parent alive live away from both. This rate increases sharply to almost ten percent for the 3 to 5-year-olds, to more than 16 percent for the 6 to 9-year-olds, and more than twenty percent for the 10 to 14-year-olds.

Table 1.2 Fosterhood and orphanhood rates in Benin.

Age in years	Living with both parents	Living with mother, father alive	Living with mother, father dead	Living with father, mother alive	Living with father, mother dead	Living with neither, both alive	Living with neither, father alive	Living with neither, mother alive	Living with neither, both dead	Missing on whether father/mother alive
0-2	79.8	15.7	1	1.3	0.2	1.4	0.1	0	0	0.4
3-5	72.4	11.2	1.7	4.2	0.5	8.4	0.5	0.6	0	0.4
6-9	61.8	9.8	2.5	7.8	0.9	13.5	0.6	2	0.6	0.6
10-14	52.9	9.5	5.1	8.7	1.5	16.4	1.1	2.9	1	0.9

Source: DHL, 2001

Table 1.2 also shows that when the parents do not live together, almost all young children live with the mother. The share that lives with the father increases by the age cohorts, meaning that as children grow some move away from the maternal household and go to the father.¹

1.1.3 Child labor in Benin

In 1998 the UNDP office in Benin carried out a detailed time allocation survey that included 5275 children between 6 and 17 years old. While table 1.1 shows an official child labor rate of 26 percent for Benin, analysis of the UNDP data shows that almost 82 percent of children performed at least some sort of work (in the formal or informal labor market or housework) during the reference day. While 11 percent exclusively went to school, 50 percent only worked, 31 percent did both and 8 percent neither. Labor participation rates show a rapid increase between the ages of 6 and 11 from around 50 to more than 90 percent. For the rural areas – the focus of this thesis – the labor participation rate is slightly higher, but the total school participation rate is almost 10 percent lower than national average. The average number of hours worked (for the children who did work) is much higher in rural areas.

For this thesis, it will be of particular interest to compare the work day of four particular groups of children: (a) rural children who stay with their parents and go to school, (b) rural children who stay with their parents without going to school, (c) children who live away from home, in both urban and rural areas, and go to school, and (d) children who live away from home, in urban as well as rural areas, and who do not go to school. Table 1.3 shows the average work day of boys, girls and all children in the four categories:

Table 1.3 The average work day for children 6-17 years old (inactive children included).

	Boys	Girls	Total
Rural school children living at home (N=764)	2.2	2.9	2.5
Rural non-school children living at home (N=1516)	4.2	5.7	4.9
Non-biological children of the household head in school ² (N=392)	1.9	2.6	2.2
Non-biological children of the household head not in school (N=780)	5.8	8.3	7.4

Source: UNDP Enquete Emploi du Temps au Benin, 1998

Gender differences are systematic and girls generally work more than boys. School children also work, but much less than children who do not go to school. Children who live away from home and do not go to school work much more, although it must be kept in mind that they are on average a year older than the children who stay at home, and this extra year explains some of the increase. Children who go to school away from home have an average work day that is quite similar to school children living at home.

1.1.4 Child labor migration in Benin

This thesis is based on a survey of child relocation carried out in Benin in 2000. An NGO report derived from the survey showed that as much as 22 percent of rural children 6 to 16 years old already had left their parental households. When asked directly, parents reported that 9 percent had gone to work, 5 percent to study, 2 percent to marry and 6 percent for “other reasons”. Extrapolations would indicate that about 100,000 children between 6 and 16 years of age had left their parental households in rural Benin to go and work, half of them abroad and the rest in more urban areas of the country. The

majority who had gone abroad were boys, while girls more often went to other parts of Benin. The boys were on average 11 years old at the time of departure, the girls 10. Older children more often went abroad. Most parents stated that poverty was the main reason why they had sent their children away.³

1.2 Why study child labor migration?

Studying child labor migration is important in its own right because of the relative vulnerability of the child labor migrants and the ill faith of many. It should be of normative concern to policy makers and can not be ignored by those interested in reducing child vulnerability, for instance by influencing “unwanted” parental choices with effective policy interventions.

But child labor migration deserves to be analyzed beyond that: *child labor migration is the missing piece of the puzzle in existing child labor research*. The child labor choice does in reality have two different outcomes: working while living at home and working while living elsewhere. Only the first and probably least risky option has thus far been studied. Policy advice on child labor derived from previous studies is thus impaired by this shortcoming.

Why is that? Since empirical research most often is based on household survey data it allows for studying the labor activities of all children *who belong to a household*, including in-fostered children. Most household surveys *do not* question whether there are children born into the household who are no longer there. That way they do not permit the study of the parental decision to send a biological child away from the primary household to work elsewhere, as an alternative to working in its local community or going to school. In other words, the child labor choice studied up till now is incomplete and quite possibly excludes many of the most risky child labor choices. This will also affect the policy advice derived from these studies.

As the previous section shows, the numbers of non-orphaned foster children in Africa is high, and relatively consistent research findings show that foster children work more than their peers. This suggests that sending children off to work is a common choice. While many such children can be observed as members of households where they work, others are most likely beyond the reach of the common household survey because they live in workshops, in Koranic schools, in abandoned buildings, in the streets or other public places, in more or less temporary housing for workers, at commercial farms, in mining areas, brothels, quarries, or even in the bush with criminal gangs and armed forces. They do not live in the type of households that would normally be sampled in a survey, and even if they do, some are likely to be forgotten when the household head lists the household members to the interviewer – they do not belong, they are just servants.

Most empirical research on child labor and schooling choices includes a dummy variable for whether a household child is a biological child of the household head or not. Does this biological relationship explain his or her probability of working versus going to school? As section 1.3 will show, research results are inconclusive, in particular in rural areas. Two factors explain this perhaps counter intuitive result. First, foster children as a group are quite heterogeneous, and second, agents other than the household head have often participated in making the children's work or school decision, often even prior to them coming to the household. Educational fostering is common throughout Africa and especially in the countryside. The higher the element of educational fostering, the more schooling and the less work will be found among foster children. By using a dummy variable for biological relationship to the household head children who have been sent to stay with a relative who lives near a school are grouped with child domestic servants and orphans. Child labor migrants are therefore not well studied even when living in regular households, and sampled by regular surveys.

Certain issues related to child labor migration have been approached politically through a quite particular angle in West Africa: During the 1990s, a debate around alleged child trafficking arose in the international development community. ILO drew attention to the fact that many children were working under harsh and exploitative conditions away from their families – many even outside their own countries. They were found in commercial agriculture, as domestic servants, as street vendors and porters, at construction sites and in workshops. Rumors flourished that profiting intermediaries had been involved in facilitating children's movement away from the parents and into these abusive situations. The use of deception or even force was assumed in most cases.

Applying the international definitions and policy regulations of human trafficking to the situation resulted in quite a new approach to a practice that had developed over decades – perhaps centuries – in the West African region. Human rights activists argued that child trafficking is a crime of equal gravity regardless of cultural context, and the first wave of policy interventions to help curb the practice was therefore mainly of legal and judicial character: new anti-trafficking laws were developed, police and border patrols were trained to identify traffickers, new travel documents were required for children wanting to cross borders without their parents. At the community level, *village surveillance committees* were established, funded and supervised by international NGOs.

But after a period these interventions were increasingly being questioned. Were legal regulations just and adequate if poverty was indeed the trigger for child trafficking? And were the interventions effective in reducing the number of children relocating? The answer to the latter appeared to be no. Even sharper questions were raised: was it possible that all the new laws and regulations that had been put in place had instead led to more corruption, with the cost being borne by the poor?⁴

A more fundamental concern followed: did the (facilitated) labor migrations of children in the region indeed match the definitional criteria for trafficking in the first place? As the debate went on, the international definition of the trafficking concept underwent several changes and became gradually more extensive. While earlier definitions were not particularly suitable to capture distinctions in different West African practices, the newer definitions were more liberal and appeared to aim to include a larger share of the potential risk cases.⁵

Alongside this process of definitional adaptation came the development of an increased understanding of the complexity of the issue. A number of qualitative studies were commissioned by NGOs and international agencies, and above all, parts of the international community relaxed somewhat on the principle of treating anything resembling trafficking as a crime and opened their ears to local interpretation, cultural and social explanations. Yes, many children did relocate in the area, and on the way they were assisted by adults with more or less selfish motives. But how else would they travel? The adults helping them out on the way did not appear to be particularly well organized, nor criminals specializing in clandestine operations. Instead they were often local traders who were traveling in that direction anyway and who might as well bring a child along for a small fee. They were village- and kinsmen with contacts in commercial agriculture or urban centers and who could use their networks to find the child a job – against a small fee or favor. In contrast to trafficking into prostitution, the profitability of the labor markets these children were entering was so low that they could hardly be interesting to organized crime of any proportion.⁶

Opening up for the possibility that these children were not primarily the victims of trafficking was politically controversial. The “child slaves to cocoa”⁷, the “Etireno slave ship”⁸ and other similar cases had long made great newspaper headlines. Moreover, the dramatic sound of the “trafficking” word had been

helpful in raising funds. Media attention has a tendency to drop, accompanied by shrinking funding, as soon as poverty replaces crime as a principal explanation for a phenomenon.

Several different child labor practices remain an issue of concern in Africa. International as well as national legal instruments designed to address unwanted child labor have proven to be difficult to enforce in societies where families – not factories or plantations – are the primary employers of children. In Africa poverty therefore remains the ruling explanation for the most common child labor practices. When children work away from their households and families they are normally more at risk and less protected than when they work around their homes. The ruling assumption therefore remains that only acute distress would force families to expose their children to this increased vulnerability.

At the policy level, social policy interventions to reduce poverty in rural communities at risk have increased. Microfinance, projects funding income generating activities for women, and rural development projects are used to help reduce the early expulsion of children from parental households.

The issue of child labor migration has also become connected to the schooling situation in many rural areas. Although schools are generally not too far away to most rural children, a mere glance at some of those schools explains a lot: many have mud walls and dirt floors, and caving straw-and-dirt roofs hanging so low that an adult can barely stand upright inside. In addition, poor teachers, sexual harassment of girls, irrelevant curriculum, school vacations poorly coordinated with local harvest seasons, and the demand for “irregular” and illegal school fees by underpaid staff largely explain the unattractiveness of the available schooling choice. If on top of it there is a low child labor demand and the return to local child labor is marginal, the incentive structure is in place for

sending children away from home earlier than they would under better local conditions.

Awareness and sensitization programs have also been implemented. Perhaps there is ignorance to the risks the children are exposed to. Perhaps parental attitudes are misguided. And perhaps communication can change some of this.

Policy aimed to increase school attendance, reduce child labor and reduce child vulnerability overall must be guided by adequately designed research. It is in the first place greatly challenging to regulate a production system where families and households are the main economic units, as is the case in rural Africa. Better understanding the relationship between the various factors that determine child labor migration will help to better assess the effectiveness of different policy interventions that are currently being proposed and undertaken by governments and aid organizations. There is therefore a need for a systematic identification of the effects of various potential determinants. With such knowledge child welfare policies of relevance to child labor migrants can be adjusted and improved. What policies are likely to work more effectively to protect children at risk, and under what conditions? This thesis aims to give partial answers to these questions.

1.3 Relevant research references

While scholars from many disciplines have studied children's labor for decades, the quantitative research literature on child labor expanded considerably after economists started taking an interest in the topic about ten years ago. During the end of the 1990s and beginning of the new millennium a bulk of econometric analyses of child labor participation in African countries was produced.

This section will mainly refer to the approaches and findings from Ghana by Canagaraja and Coulombe (1998), Blunch and Verner (2000) and Bhalotra and Heady (2001), Cote d'Ivoire by Coulombe (1998) and Grootaert (1998), Zambia by Nielsen (1998), and Ethiopia by Cockburn (2000). Good summaries of the global results have been presented by many others, for example Bhalotra and Tzannatos (2003) and Canagarajah and Nielsen (1998). This thesis therefore places a particular focus on synthesizing their findings for the *rural* areas, which are most relevant to the analysis that follows. The operational definitions of child labor are diverse in the studies, the age ranges of the children are different, and the equation variables also vary quite a bit. This, in addition to country specificities, probably explains many of the differences in the results. References will also be made to more theoretical contributions (notably Basu (1999)) and non-economic literature of particular relevance (like Bradley (1993) and Reynolds (1991)). For a more comprehensive summary of multidisciplinary research conclusions on child labor in Africa, see Bass (2004) or Kielland and Tovo (2006).

1.3.1 Child labor and schooling

Child labor and schooling are often presented as the two alternative choices for children's time use, but it is increasingly clear that they are neither mutually exclusive nor exhaustive categories (Bhalotra and Tzannatos (2003)). Many children combine going to school with working, and a few do neither. Children who combine school with labor may have their performance affected by their work load, as documented in Ghana by Heady (2003). When children remain idle in rural Africa, this is probably due to illness or a situation of un- or under-employment, the latter quite common, particularly in the agricultural low-seasons. In most datasets the "idling" category is likely to comprise a high number of children who work in and around their own households in types of activities that are not locally regarded as "real" labor by those reporting on their activities.⁹

In empirical analyses, incentives to schooling are typically measured by indicators of costs (proxied by official and unofficial fees, school material, textbooks and/or uniforms), quality (proxied by quality of school buildings, relevance of curriculum and/or teacher/student ratio), and access/transportation costs (proxied by variables like distance to school in minutes/km, presence of a road and/or availability of public transport). Few analyses have indicators of all three, something that appear to affect the results. Measuring the opportunity costs to schooling have also been attempted, for instance by including indicators of child labor demand or estimates of child wages.

Almost all the papers have indicators of **access** to primary school. Both Nielsen (1998) and Blunch and Verner (2000) measure access in minutes, and find that distance increases child labor participation.¹⁰ Coloumbe finds that distance measured in km increases child labor in Cote d'Ivoire, while Canagaraja and Coulombe (1998) find the same indicator not statistically significant for Ghana. Grootaert (1998), comparing a probit to a logit model, finds that fewer children combine school and work when the distance is more than one but less than 5 km, arguing that the long distance leaves too little time for both. His logit model also shows a significant increase in the probability that children only work when the distance to school is between 1 and 5 km.¹¹ Noticeably, however, he also finds statistical significance for more school and less work when the distance surpasses 5 km. Bhalotra and Heady (2001) find that the presence of a primary school has no impact, but a middle or secondary school in the community reduces child labor. Using "presence of public transport" as an indicator of transportation costs, they also find that it reduces the child labor probability for girls.¹²

While Nielsen (1998) finds the **costs** of schooling to increase labor participation and reduce schooling in Zambia, Coloumbe (Cote d'Ivoire) and Canagaraja and Coloumbe (Ghana) find that costs actually increase school participation. The most likely explanation is that while Nielsen (1998) also

includes a measurement of **quality** (that reduces labor and increases schooling), this control is not a part of the two other equations. The cost variable therefore most likely also serves as a relatively robust proxy to school quality in countries with substantial quality differences between public and private schools. Grootaert (1998) finds no impact of costs in the probit approach, but his multinomial logit model shows schooling costs to increase the probability that children only work.

The effects of the availability and costs of schooling on child labor choices are perhaps not as strong and systematic as one could expect. Schooling indicators not surprisingly show a much stronger and more significant impact on the schooling decision than on child labor. The conclusion must be that schooling features also affect the remaining option for children: poor access and high costs increases the number of children performing unregistered domestic work or idle in and around their own households.

1.3.2 Child labor and poverty

Poverty is a strong determinant for the lack of schooling of African children. While poverty is also the most intuitively appealing explanation for child labor, it has systematically shown a weak or even non-existing impact on child labor participation in the empirical research – in particular in rural areas. This has led to the development of several possible explanations:

First, the wages or utility of child labor constitute part of a household's income, consumption, expenditures and wealth, and most wealth measurements are thus endogenous in the child labor equation. On a methodological level it is therefore argued that such endogeneity causes an upward bias in the wealth coefficient, and that its limited impact must be understood partly as a result of model insufficiencies (Bhalotra and Tzannatos (2003)). This challenge can be met by statistically instrumenting the endogenous independent variable.

Second, on a theoretical level it is pointed out that the most logical place to invest available resources in poor rural communities is in labor intensive assets like land and livestock. Ownership to such assets in turn increases labor demand and thus the marginal return to child labor in an environment of un- and underemployment. Opportunity costs to schooling thereby augment. To specify these theoretical deliberations, the “wealth paradox” concept is introduced, arguing that given multiple market failures, land and asset rich households will have a higher child labor demand and higher opportunity costs to schooling than presumably poorer households with few or no productive assets. This stresses the need to include measurements of asset ownership in addition to wealth measurements in the regression equation (Bhalotra and Heady (2001)).

Third, from the sociological and anthropological fields, child labor is understood more in terms of socialization and skills training, something that would place more importance on non-economic causes (e.g. Castle and Diarra (2002) and Reynolds (1991)).

It is important to keep in mind that most empirical analyses of child labor in rural areas in Africa in reality study the variation among households that are all relatively poor: rural African households are in general so constrained and at such a constant risk that even the “better off” among them may find it unaffordable to eliminate child labor all together. Wealth would probably have shown a stronger impact if the relative variations between poor and rich had been greater.

In her analysis of Zambia, Nielsen (1998) finds that landownership increases the probability of a child working – for a rural 13-year-old by as much as 20 percent. Wealth, measured by household expenditures per adult, reduces the likelihood. The impact is however marginal, although larger in rural than urban areas: an income increase of 35 percent would for instance only reduce child

labor by 3-5 percent in an average rural community. On a national level she concludes that a real growth of 2 percent per year through 15 years only would reduce child labor by one fifth.

Coulombe (1998) also finds that child labor increases with land ownership and land size, while he finds *no* significant effect of his (statistically instrumented) wealth variable at all. Even more surprising, Canagarajah and Coulombe (1998) find a weak *positive* impact of expenditures per capita (log) for Ghana, in fact, they find the relationship between wealth and child labor to be inversely u-shaped. The logical explanation would be that a certain income level is required before a *further* wealth increase can be expected to reduce child labor. Before reaching this wealth level, earnings may be invested in productive assets that lead to an increased child labor demand. Contesting their findings, Blunch and Verner (2000) utilize a different dataset for Ghana. They create a wealth index and find a more systematic impact of wealth, although the effect is admittedly “somewhat small” (p13). Also their study concludes that assets like cattle, sheep and land increase child labor, the latter only for boys. The two datasets for Ghana are however strikingly different. While the former operates with a child labor rate of 28 percent, the latter only defines around 3 percent of children as child laborers. Comparison of research results on child labor is in general quite sensitive to how child labor is operationally defined, and therefore to the types of tasks that are included in the child labor definition.¹³

Grootaert (1998) does not include the land ownership variable in his regression for rural areas. His poverty estimate is a dummy for whether the household falls into the poorest quintile. In his sequential probit he finds no significant effect on the “only school” or “only work” choices, but the probability of children combining work and school is reduced if the child’s household is among the poorest 20 percent. In the multinomial logit analysis he finds that while fewer children combine work and school, more children only work or idle if the household is poor.¹⁴

Bhalotra and Heady (2001) only look at farm labor, and conclude that the wealth paradox presented in the introduction to this section is stronger for girls. While land ownership increases girls labor, wealth (measured by instrumented food expenditures) reduces it. The number of plots owned by a household increases the probability of farm labor for both boys and girls.

Cockburn (2000) makes the most detailed study of how child labor is affected by household ownership of various assets. He does not include an income variable per se, and many of the results are not statistically significant. The tendencies are however clear across a range of sub-samples: certain assets are child labor demanding (notably small live stock and land), while others are labor saving (oxen, bulls, ploughs, high land quality and proximity to a source of water).

Only Nielsen (1998) includes credit access in the regression equation. Credit should help relax the effect of poverty constraints, in particular when these are related to temporary income fluctuations. She finds that (formal) bank credits help reduce the probability that a child works, e.g. for a rural 13-year old by 6.6 percent. Informal credits are not statistically significant to the child labor choice. Interestingly, neither credit type is important for children's school participation.

1.3.3 Child labor and agency

Children are normally not the agents of their own labor supply, at least not as long as they live in their parental households or are in the care of others. The features of the parents therefore matter in the decision on child labor and schooling. In economic theory, households are often regarded as unitary models where income, preferences and responsibilities are pooled and organized as effectively as possible. It is a common theoretical assumption that such households are altruistic vis-à-vis their children (Basu (1999)).

The assumption of a unitary household decision is on the other hand probably too simplistic in the case of child labor in rural areas. It is instead increasingly common to assume that a household bargaining process takes place, and that fathers and mothers have different preferences in this bargaining game (Iversen (2002a), Balsvik (1995), Udry, C. (1996), Alderman et al (1995), Ilahi (2000), Quisumbing and Maluccio (1999)). Parental features like age and education can be interpreted as proxies to the relative bargaining powers of mothers and fathers.

It is likely that many children participate in the bargaining process, directly or indirectly. The child's influence depends on age, gender, maturity and other personality related indications of (relative) bargaining power that are normally unobservable in survey data (Iversen (2002a)). Some model children's bargaining participation through a mother-child nexus (Grootaert (1998)), indicating the strong relationship commonly assumed between women's and children's preferences ("mother is more altruistic"). Bradley (1993) challenges this assumption and points out that there is indeed also a conflict of interest between women and children since women are likely to have to do the low status child labor in and around the household if children are sent to school. Andvig (1997) argues that compulsory schooling in this respect in fact constitutes an indirect taxation of women.

The theoretical principle of parental altruism is also challenged by empirical research that for instance shows that adult labor supply is indeed endogenous in the child labor equation: it is not so that parents always provide the same amount of labor, while child labor comes in addition in times of constraint. Parents often work less when their children work more (Bhalotra 2000). The limited impact of poverty on child labor participation presented in the previous section can therefore also be interpreted as an indicator of parental altruism being relative. Poverty involving child labor can then be read as a potential result of parental "laziness" – more elegantly put by Bhalotra and Tzannatos

(2003:p9) who state that: “...if poverty is measured by adult income then what appears to be a poverty constraint might in fact be relaxed under greater parent altruism”.

Perhaps the most precise way to study parental altruism is to look at the distribution of household consumption. How is consumption distributed between adult-related and child-related expenditures in households applying child labor and households that don't? And how does a marginal increase in household consumption affect the ratio of child-related versus adult-related consumption (Bhalotra and Tzannatos (2003))? An interesting finding in the altruism debate is that households that consume alcohol and tobacco are more likely to have children working and less likely to have children in school (Bhalotra (2001), Quisumbing and Maluccio (1999)).

Are mothers more altruistic than fathers? In a 10-country study it is documented that paternal orphans go more to school than maternal orphans, when controlling for the fact that the latter tend to live in wealthier households (Case et al 2002). Grootaert (1998) shows that when one of the parents works in the formal sector, the probability that the household children work increases. The mother having a job outside the household increases the probability that her daughters work, presumably to substitute for her labor in household chores. The latter case should exemplify the interest conflict between women and children described by Andvig (1997) and Bradley (1993).

Four of the seven empirical analyses scrutinized in this section have the gender of the household head as one of the variables, and the results generally do not support the notion of there being a mother-child nexus. Having a female household head is generally not statistically significant in the labor equation in rural areas, but Grootaert (1998) finds that having a female household head reduces the chance that children go to school. Bhalotra and Heady (2001) find that girls' probability of working increases with a female household head,

while Nielsen (1998) finds the same for the combined urban-rural sample. Canagarajah and Coulombe (1998) find that while mother's *presence* in the household is without importance for schooling and work, the presence of the father increases the probability of schooling and reduces the probability of work for the children. Cockburn (2000) finds a tendency towards more education and less work for children of female-headed households across all his sub-samples, but the results are generally not statistically significant.

Age and education most likely represent experience and knowledge, and should lead to better informed choices. If in particular agent education does not reduce child labor, other things held constant, one should either question altruism or take a close look at the quality and incentives to the alternatives. Age and education are as mentioned used to proxy agents' relative bargaining power in the household bargaining game over child labor and schooling choices. Would then the impact of fathers' age and education be any different from that of the mothers? Nielsen (1998) does not include mothers in her analysis, but finds that father's age and education reduce child labor and increase schooling. Canagarajah and Coulombe (1998) and Coulombe (1998) find no such impact of parental education on the child labor choice, unless the father has post secondary education. Grootaert (1998) finds a different impact on boys and girls: while father's education increases the probability that a boy combines school and work, it reduces the probability that girls do so, while it is statistically insignificant for all other choices. Mother's education increases both the "only school" and the combined "school and work" likelihood for boys, but reduces the probability that girls go to school. This fits well with the same equation finding that if the mother works in the formal sector the likelihood that girls work increases, thus stressing the interest conflict between mother and daughter. Bhalotra and Heady (2001) find no impact of the father's education but mother's education reduces the likelihood that boys work. Cockburn (2000) finds that the age of the household head reduces girls work

and increases their schooling probability, but has no effect for boys. The education of the household head reduces work and increases schooling for all.

In short, results are inconclusive. Parental education and age generally increase the likelihood of schooling and reduce the likelihood of work, but the evidence that mother's bargaining power somehow should lead to more altruistic decisions is not clear. While this may be caused by an interest conflict between women and children, it is also natural to assume that the more or less imperfect wealth measurements applied in the various models leave room for multiple spurious effects being captured by e.g. the "female household head" variable, since female-headed households are generally poorer than others. Even with perfect income or wealth indicators, the "female household head" variable is likely to express household vulnerability in traditional societies, where a female-headed household will have a more restricted access to influence, credits, jobs and insurance arrangements (Bhalotra and Tzannatos (2003:p43)). One can therefore not plainly reject the assumption that mothers are more altruistic in the child labor decision based on these findings.

When analyzing ordinary household survey data, expectations of altruism should also be relaxed for another reason: Bhalotra and Tzannatos (2003) point out that an increasing number of children live in households where their parents are not household heads, and many live away from their parents all together, for instance orphans. Their agents – or at least some of the more powerful participants in the bargaining process over their choices – can therefore not be expected to be as altruistic as the biological parents might have been. Referring to *Hamiltons rule*, Case et al (2002) find that the outcome for orphans depend largely on the degree of relatedness of the orphan to the household head.¹⁵

Most of the empirical analyses include a dummy for whether the child is the biological child of the household head or a foster child. While foster children are often found to be working somewhat more and going less to school, this

relationship is often not statistically significant to the surprise of many analysts. More clarity is reached when segregating the urban from the rural households. While urban findings generally concur with Hamilton's rule, they are often opposite in rural areas. The explanation is the high element of educational fostering in many rural areas: the foster child is not an unfortunate child sent away from home, but rather the smart kid who needs to continue his or her education and therefore has been moved to the relative living closer to a (better) school. This heterogeneity – in particular among rural foster children – is often overlooked by scholars. In their rural sub-samples, Nielsen (1998) finds that non-biological children go more to school. Coloumbe and Canagarajah and Coulombe (1998) find the relationship to the household head to be statistically insignificant in rural areas, but in the urban areas Hamilton's rule is confirmed. Blunch and Verner (2000) find that non-biological boys work less in rural areas, while again Hamilton's rule is confirmed for urban girls. Cockburn (2000) as well as Bhalotra and Heady (2001) find the opposite: non-biological sons of the household head work more, while girls' labor participation is not affected by their relationship to the household head. Their deviant findings may be explained by their somewhat different definition of child labor: both studies focus on agrarian households, and mainly the participation in farming. First, school participation rates are generally lower in farm households, and second, farm households will be underrepresented among rural households who take in foster children for educational fostering.

Before concluding the section on parental altruism a final question deserves to be raised: is it reasonable to assume that altruism means the same to rural peasant parents in Africa as it does to Western scholars? Quite obviously not. It is indeed quite likely that work is perceived as a good, not bad, in many situations and settings. This would in particular be the case where extra income is badly needed and work is difficult to obtain. Also this debate is largely ignored in current empirical research, sometimes leading to a limited understanding of findings. Guarcello et al (2004) for instance are surprised to

find a low impact of orphanhood on child labor, and that orphanhood increases the share of children who are inactive. If child labor is seen as a good instead of a drawback, it makes sense that those with good networks and contacts compete better for the jobs available.

Child labor can also help the socialization of a labor discipline that can be of fundamental importance for survival in tough places like the African countryside. Reynolds (1991:p106) for instance writes about girls work: “*The ethos of womanliness is “the dull compulsion” of daily work. Girls are reluctant apprentices. A woman’s duty is to bind her daughter into service in order to secure her future as a farmer and a useful servant in the kinship network.*” Coaching children into even very hard labor may thus indeed be viewed as altruistic, rightfully or not.

2. Theory

“At least as important a shortcoming is that empirical research [on child labor] has been conducted without adequate reference to theory. As a result, the estimated equations are sometimes mis-specified, and often difficult to interpret. This impedes the confidence with which policy prescriptions can be applied”.

Bhalotra and Tzannatos (2003:Abstract¹⁶)

What causes child labor migration? The various ongoing and proposed policy interventions aiming to curb the practice all derive from some more or less well founded hypotheses of what causes it. Together these hypotheses can be seen as forming a more informal theory of child labor migration, but a more formalized theoretical approach has not yet been defined.

A theory of child labor migration could be inspired by theories of child labor, adult migration or child fostering, and many of the core elements of the three approaches are indeed similar. This thesis takes its point of departure in child labor theory, but remains inspired also by theoretical approaches within the other fields. This choice is made for a few key reasons: First, unlike adult migration, the decision of a child's labor migration is likely to be made primarily by others than the migrant him or herself, probably in a bargaining setting where the child has some but mostly not decisive influence. Moreover, the adult migrant is normally not facing the labor versus education choice. Second, while child fostering has multiple purposes and functions (Akresh 2003), child labor migration is less complex, at least in principle. Third, many of the methodological concerns revealed in the literature on child labor are indeed very relevant for child labor migration. The latter will be thoroughly discussed in the next chapter.

In their 2003 paper, Bhalotra and Tzannatos (2003) outline a basic theoretical model for empirical analysis of child labor participation. This model, with relatively small adjustments and amendments, seems suitable for empirical approaches to child labor migration as well.

What exactly is *child labor* and how could *child labor migration* be defined? None of these concepts are straightforward, but can be more precisely understood on the background of various existing definitions as well as definitions of related concepts. Before turning the focus to the theoretical model, some such definitions will be presented.

2.1 Central definitions

2.1.1 *Child labor*

A **child** is by the *UN convention for the rights of the child* defined as any human being below the age of 18, and **labor** would in economic terms be understood as one in three factors contributing to production (the other two being land and capital).

In recent reports ILO defines **child labor** with point of departure in the so-called *Minimum Age Convention* 138 as¹⁷: “For 5 to 11 year-olds: all children at work in economic activity.” ILO does not define household chores in own household as *economic activities*. “For 12 to 14 year-olds: all children at work in economic activity, minus those in light work.” *Light work* is defined as non-hazardous work for up till 14 hours a week. *Hazardous work* in its turn is “any activity or occupation which can lead to adverse effects on the child’s safety, health, and moral development.” “For 15 to 17 year-olds: all children in the “worst forms” of child labor.” The *unconditional worst forms* are, according to ILO convention 182; slavery, trafficking, bondage, serfdom and forced compulsory labor, child soldiering, child prostitution and use of children in

drug smuggling and other criminal activities. In addition comes “*work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children*”.¹⁸

While not all work activities of children are understood as bad, the concept “child labor” is in rhetorical terms used to refer to work activities that are somehow harmful and unwanted. Conversely, the term “**child work**” is by some proposed used to describe harmless activities. Others use the term “child work” to describe *all* productive activities undertaken by children, and among them some can be classified as child labor. In the latter case, the counterpart to child labor is termed “**light work**” and should be condoned.

The definitions remain guiding and normative for empirical research because they are difficult to operationalize. Most empirical data lack the necessary information to distinguish accurately between the various types, and subsequently the terms “child labor” and “child work” are used indiscriminately. What exactly is counted as child labor varies greatly from study to study. Some include only labor performed in the formal labor market, and that way exclude the majority of child work in Africa. Most include non-remunerated work in the informal labor market, while the most recent also acknowledge the importance of including domestic chores.¹⁹ While some datasets have information on hours worked (and even tasks performed) the most common ones ask whether the child performed some sort of work in a given reference week or period.

The distinction between child labor and child work is also arguably simplistic. While it may be indicative of abuse, reality is often less black and white, and more a question of gray shades, or, as argued by Pierik and Houwerzijl (2006:p202), it is more like a continuum from the least to the most tolerable forms of work than a strict dichotomy.²⁰

2.1.2 Child trafficking

Child labor migration in West Africa is confounded with the trafficking concept throughout policy and literature, and many of the core contributions to the child migration debate indeed stem from studies that initially intended to study what was assumed to be child trafficking. Defining child trafficking is therefore of concern to this thesis. Child trafficking is one of the so called “worst forms” of child labor according to ILO Convention 182, article 3(a). Beyond that, a myriad of definitions exist, many are similar with only small linguistic distinctions. In spite of disagreement and regional objections, the so called *Palermo Protocol* remains the official reference point for defining child trafficking:²¹

“Trafficking in children shall mean the recruitment, transportation, transfer, harbouring or receipt of a child for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs.”

Other (older) definitions include the precondition that a transaction takes place, and concepts like force, deception, fraud, coercion, violence and deprivation of freedom of movement are emphasized. This is left out by the Palermo Protocol, making the definition much more extensive – but also more difficult to apply. The new approach does not assume border crossing. Trafficking can thus take place within a country, and traffickers do not need to be organized to be legally prosecuted.²²

The main challenge of the Palermo definition is that it raises a range of new definitional questions, and the answers are unclear. The content of “exploitation” remains a main topic for debate, and what exactly is “forced labor”, “slavery like practices” and “servitude” in an African context? It is

furthermore difficult to prove the criminal intent of the various facilitators along the routes of migrating children.

Links between migration, human smuggling and trafficking are evident. Unicef's research center ICDC (2004) argues that migrants may be abducted by what they perceived to be smugglers, and end up in trafficking. The US State department, however, stresses that while smuggling generally happens with the consent of the person in question, fraud, force or coercion are obligatory elements in trafficking.²³ For research purposes, the operationalization of the trafficking concept remains difficult.²⁴

2.1.3 Migration

Migration refers to a relocation of groups or individuals and is a concept that can be defined along several dimensions. There is no universally accepted typology of migration flows (Nkamleu (2006)). It is common to define migration in i) temporal aspects, referring to both distance and duration of the relocation (seasonal/short term/long term), while ii) the spatial aspects refer to whether the relocation goes from urban to rural areas, from rural to urban or take place between two rural or two urban locations.

Nkamleu (2006) also refers to chain and group migrations which are relevant to this study and common throughout West Africa. Chain migrations in particular, assume that members of a community or a family have relocated to a certain area over time, perhaps over generations. Children as particularly vulnerable migrants can thus more easily rely on the assistance of relatives, friends, relatives or friends of friends, and others from the home community both during the relocation process and in the destination area. Group migrations are often more related to exogenous *covariate* shocks (shocks hitting whole communities), and in certain areas of West Africa families may send children on group migration as a risk coping mechanism, for instance following a bad harvest or epidemic disease.

2.1.4 Child labor migration

There is no official definition of “child labor migration”. Children should, however, qualify as labor migrants the same way adults do, given that they perform child labor at the destination site, and that this explicitly or implicitly was part of the motive for relocating. Child labor migration can, similarly to adult migration, be seasonal, short-term or long-term, be an integral part of chain and group migrations, and can be triggered by push as well as pull factors. Child labor migration differ from child trafficking by the fact that the child or at least the child’s family voluntarily agrees to the relocation, but would in a West African context inevitably comprise quite some cases characterized by labor exploitation, coercion and deception.

Child fostering practices in West Africa were described in section 1.1.2 of this thesis and are no doubt related to the child migration situation. Child migrants often go to stay and/or work with relatives and kind, but this does not change the fact that they leave their parental households and home communities searching for work and a better life, similar to adult migrants. It can be argued that the tradition of circulating children within extended families makes the migrant label somehow alien to many in a West African setting. But the fact that most West African foster children are treated quite differently from the children in the households where they stay and work – notably, they work more – should indicate that their exodus often can be interpreted at least as a step in an early emancipation process. Since more recent interpretations of the child labor concept comprise domestic and informal market chores, the activities of the children in question are no doubt to be regarded as child labor. At the same time, the labor migration of a child plays a role in a household’s risk management scheme in many of the same ways as the migration of an adult household member would. Not only does the child some times send money back home – the labor migration also functions as a part of the collective portfolio management of the household. It can thus be argued that most foster children who work and are not in school can be considered labor migrants.

A main difference between a child labor migrant and an adult labor migrant stems from the child's relative vulnerability and inexperience. Besides being less capable of negotiating a reasonable labor agreement and beyond that a decent life situation, children are also more vulnerable to development harm and to the long time consequences of being deprived of formal education.

2.2 Model specifications

So far, few attempts have been made to construct an optimal model for analyzing child labor migration empirically.²⁵ In this context it makes sense to start out with a current standard regression equation for analyzing child labor participation. The road towards the most recent models has been paved with challenges, and these challenges are well synthesized in Bhalotra and Tzannatos' 2003 paper: *Child Labor: What have we learnt?* In this chapter their basic model is outlined and adapted to the child labor migration context. In the next chapter some methodological challenges for applying the model will be further addressed.

2.2.1 Three central hypotheses: Incentive, Constraint and Agency

Bhalotra and Tzannatos (2003) present three main hypotheses to explain the child labor choice. Together they constitute the core of a model that could also be a promising point of departure for explaining child labor migration decisions. The main difference between the child labor model and the model for child labor migration is that instead of looking at a labor/school/leisure choice, there are in principle six possible and qualitatively different outcomes when counting in child labor migration, as summarized in the matrix in table 2.1. These six outcomes are defined by adding a second dimension to the original three outcomes: whether the child is living at home or has gone elsewhere.

Table 2.1 Outcome matrix for the labor/school/leisure choice, defined by where the child lives.

	School	Labor	Leisure
Home	(a)	(c)	(e)
Elsewhere	(b)	(d)	(f)

In the labor migration equation proposed for this analysis the matrix is simplified so that there are three possible outcomes to be considered. First, category (a) and (b) are organized in one “schooling” category. Second, option (d), labor elsewhere, is singled out as the focus category for the study. Finally, options (c) and (e) are grouped into a residual category of children who stay in the home community to work or idle, while category (f) is excluded due to data limitations.

Most children will have at least some leisure time, but the theoretical possibility that the rural Beninese child will neither study nor work at all is relatively slim, as the UNDP data presented table 1.3 showed. The “leisure” option is thus more interesting in analyses based on data with information on how many *hours* of work or study a child has compared to the number of hours for leisure and rest. The leisure category is less relevant when the question is as simple as whether a rural Beninese child attends school, works at home or works elsewhere.²⁶

From a child welfare perspective, ranking the various choices is not straightforward, but it can at least be assumed that schooling is the preferable option, as it would be in child labor theory. Being sent away to work is a mixed blessing: while it may open up for the possibility of higher earnings, better work conditions, as well as new experiences and learning, it also indisputably renders a child more vulnerable to be away from family and kin. Risks of exploitation are heightened and safety nets much weaker than at home. Children need the protection, guidance and love of caring adults in order to develop well. Because of the relative vulnerability of children under 18 years

of age, it makes intuitive sense to conclude that they are better off working in their home community until they get a bit older – although this admittedly is a simplistic stand, and disputable in many individual cases.

The three central hypotheses of the Bhalotra-Tzannatos theory are referred to as *incentive*, *constraint* and *agency*. In the context of child labor migration this would mean: First, the **incentive** to send a child away to work would be that the net returns to working away are better than both the returns to schooling and the returns to staying around (working) in the local community. Second, poverty **constraints** being binding could lead to an early expulsion of children who can no longer be fed by the parental household (even counting the salary they could make working in the local community). In this situation the household can not afford to consider the (long-term) incentives to schooling. While both these hypotheses assume parental altruism to some degree, the third hypothesis raises the doubt: if parental **agency** is less than fully altruistic, children may be sent away to work for the short-term benefit of parents or the extended family who are neither forced by constraints, nor place the returns to the child at the top of their priority list.²⁷ In this thesis altruism should, according to Hamiltons Rule, have a stronger relative importance compared to previous studies since only biological children are considered.

Bhalotra and Tzannatos (2003) underscore that child labor participation rates in reality will be decided by some combination of these three factors. The relative weight of each one is important, because the *policy implications* are different. If incentives to schooling are low compared to incentives to work, **education policy** interventions could affect its relative importance. If poverty constraints are binding, **social policy** and perhaps emergency interventions would be appropriate. If parents indeed are found to exploit their children (at least to some degree), **legal regulations** should be considered, or, as a cheaper and easier to enforce alternative; compulsory schooling should be considered introduced (Basu (1999)).

The same considerations are relevant for the child labor migration choice. If the incentives to labor migrate are stronger than incentives to go to school (or stay home and work), educational options should be scrutinized. If child labor migration is indeed related to crisis fostering, social protection measures are necessary. While if parents have other interests in mind above the welfare of their children, legal interventions or sanctions of some sort would be adequate.²⁸

2.2.2 Other important factors

A factor that could help relax poverty constraints is **access to credit**. Credit can notably affect the child labor choice in two ways. Bhalotra and Tzannatos (2003) point to the most obvious one: available credit could help get a poor family out of a situation of temporary binding constraints, and prevent the use of desperate measures like the dis-saving of human capital.²⁹ However, capital (including credit) will in a poor rural setting typically be converted into productive assets. In a situation of previous un- and underemployment this probably also means a new child labor demand at home and increased opportunity costs to schooling.³⁰ Bhalotra and Heady (2001) explore an interesting twist to this situation: in a situation of credit market failure, asset rich households would compete well for the limited credit that is available because assets serve as collateral. Moreover, since interest rates vary with collateral, asset-rich households would get more attractive credit conditions and therefore be more likely to borrow. If these are indeed also the households with more child labor, credit constraint would lead to a targeting of the households with the greatest child labor problems and, remarkably, target the problem well.

While the three basis hypotheses would produce a relatively simple core model, some additional factors interact with them. For example, credit access has limited effect if the desperately poor are not aware that it is available to them or know how to apply for it. It is important to have access to and ability to understand, internalize and utilize **information** about incentives, as well as

alternative options to cope with crisis other than sending the children away. Attitudes and behavior, and thus perceived altruism, are clearly also affected by information level. Bhalotra and Tzannatos (2003) do not specifically mention information. It is however relatively easy to extend the model with variables indicating both community information access and (adult) capabilities for understanding and acting upon information and opportunities.

Bhalotra and Tzannatos (2003) mention in particular that child labor and school participation are also affected by **demand side** factors. If school is not an option and there is no local child labor demand that would give at least a minimal return, a demand for children's labor surely exists at least in some other place. For the basic child labor equation, Bhalotra and Tzannatos (2003) suggest modeling in region fixed effects or e.g. regional unemployment rates to represent local labor demand.

In the analysis of child labor migration, challenges are different. While a high local labor demand should increase the likelihood that children stay to work in their home community, it should then simultaneously reduce the relative attractiveness of the incentives to the two other options; schooling and labor migration. Beyond that, identifying demand side factors in the migration destination sites would often be difficult. Child labor migration flows typically go towards multiple destinations, and identifying demand side factors in the various destination sites would probably prove difficult and complicate the model beyond what's reasonable. The importance of such (statistically omitted) demand side factors in the destination sites, however, should be undisputable and kept in mind when interpreting the analysis results.³¹

As economists, Bhalotra and Tzannatos (2003) generally do not discuss **non-economic explanatory** factors, but they include controls for cultural variation. Since most econometric models aiming to explain child labor seem to have more limited explanatory power than models explaining the schooling choice,

there is reason to believe that something is missing. They mention briefly that incentives can be of non-economic character – that work can be satisfying, social and rewarding in itself. But there may also be other types of non-economic rewards to child labor migration. Notably, while sending children away to work may sound terrible to most, it might sound quite tempting in itself to get away from the heavy, dirty, repetitive agricultural labor in high temperatures in the Beninese country side – in particular to the more adventurous children.³² Moreover, traveling may mean **freedom** in the sense of getting away from strict parental control, as well as getting to control own income. Alongside being **exciting**, traveling may be **educational**, and also add a **status** to the returning traveler of someone who has “seen the world”. Like Thorsen (2005), Castle and Diarra (2002) claim that labor migration from Mali to Cote d’Ivoire in many cases may serve as a “rite of passage”. Sometimes only very meager earnings are brought back, and/or the earnings are rapidly wasted on status symbols and consumables. However, “having been out there” adds a social status or prestige and may in turn improve the travelers’ opportunity to influence local decisions.³³

Finally, opportunity matters. Two households or communities may face similar incentives, constraints and agency conditions. Nevertheless, migration is likely to be higher from a household with extensive **social networks** than from one with limited ones. Such networks are crucial for information about opportunities and terms, but also for reducing migration risks and providing some sort of a social safety net at the destination site. This is usually the case for chain migrations: the first (often adult) migrants pave the way for those who want to follow. They can communicate their experiences in their home communities, help broker labor agreements, facilitate travel, and that way reduce both risks and relocation costs.

3. Method

“A striking feature of available research [on child labor] is the sheer variety of results that it has produced. [...] We argue that the neglect of statistical issues such as endogeneity, measurement error and aggregation error has biased the results of a number of studies.”

Bhalotra and Tzannatos (2003:Abstract)

This chapter develops a methodological approach to testing the theory of child labor migration presented in chapter 2. Beginning with a brief presentation of the dataset that will be used, it moves on to define the dependent variables of the analysis. The theory can be disentangled into five components, each one to be operationalized by the independent variables in this regression. Special attention is paid to the particular challenges of regressing child labor on measurements of household wealth. The chapter concludes with suggesting an appropriate regression model for the task.

3.1 The dataset

The empirical data applied in this analysis is unique. It was collected in 2000 as part of the World Bank’s preparatory work preceding the development of a social protection strategy for Benin, and was designed with the particular purpose of quantifying child relocation, identifying risk areas and risk factors. The main justification for a household survey of this magnitude was a serious concern that trafficking in children had developed dramatically over the previous years. In spite of being deliberately designed to study child relocation, the available variables are less than perfectly suitable for the purposes of this study. Yet, the survey is probably the best existing dataset for such an analysis.

The data collection itself was commissioned to a local NGO (Carrefour d'Ecoute et d'Orientation, CEO) with practical experience in returning and socially reinserting children who had been intercepted by the police at the Beninese frontiers, and that thus had a considerable field network. The data collection strategy and tools were developed in collaboration between this NGO, a representative from the central statistical agency in Benin, INSAE, and World Bank staff and consultants.

Most household surveys count only in-living members of a household (including foster children) and are therefore not suitable to assess the out-fostering/out-flux of children based on features of the household of origin. This survey, in comparison, starts out with the mother and focuses on the whereabouts of all children she has given birth to. The final dataset contains information on 19 135 children 0-18 years old, provided by 6 510 mothers coming from 4 722 different rural households.³⁴ In the analysis, the 0-5-year-olds have been removed since they are not eligible for schooling, and 13 324 cases then remain in the dataset.

3.2 Operationalizing the dependent variables

The crucial dependent variable in this analysis is the choice of child labor migration. This choice will be contrasted with the schooling choice, assuming that the former is the most unfortunate and the latter the preferable one. This implies the assumption of three possible outcomes: migration to work, schooling and “neither”. The “*neither*” group serves as a reference category in the model. Section 3.2.4 will argue that it is reasonable to treat the reference category *as the choice of having a child helping out in and around the household or working in the local community*. Defining this group as a reference category makes sense since helping around the household is the natural point of departure for most 6-year-olds in rural Benin. They can then

either continue doing that, have their prospects improved by being sent to school, or become exposed to the risks of being sent away to work. (These normative considerations are admittedly simplistic, but consistent with the argument in section 2.2.1.)

Throughout this section references will be made to analyses of the primary data from the time allocation study presented in section 1.1.3 (Enquête Emploi du Temps au Bénin (1998)). Where the child migration dataset proves inadequate, the UNDP data will guide the search for adequate solutions to definitional challenges.

3.2.1 The child migrant

Before defining the child *labor* migrant, it should be clarified how a “child migrant” can be operationalized by the available data. Three variables are helpful: (i) the age of the child, (ii) where the child lives, and (iii) the time of departure for those who have left. *A child migrant is defined as a child 6-18 years old who is living outside the district (sous-prefecture³⁵) of the mother’s household.* This definition applies to 23 percent of the children in the sample (N=3080) and has several implications.

First, 18-year-olds are not children according to the UN definition of a child. However, more than 90 percent of those who were 18 years old when the survey was conducted had left more than a year before, and were therefore children at the time of migration. The value of extending the child labor migrant sample was considered important enough to keep this group.

Second, defining a “child migrant” as “living outside the region of the mother’s household” raises two issues. To begin with, migration is given a geographical scope, excluding children living in other villages within the same district. The definition is inaccurate even when it comes to distance since children in larger districts can be further away than children in small districts and still not qualify

as migrants. Similarly, a child in a neighboring village on the other side of a district border may be much closer than a child living in the far end of a large district but still count as a migrant. In addition, the definition determines the mother's household as "home", so in cases where the parents are separated the child may live with the father and still be regarded a migrant. There are practical obstacles in correcting for this problem with the available data since mothers are the main informants and only vaguely indicative information exists on whether an absent child lives with the father. While it is more common for Beninese children of separated parents to stay with the mother than with the father, this tendency is less strong in the age groups of this survey. The definition is justified, however, by the fact that almost all young children of separated parents (0-6 years old) live with their mothers (see table 1.2, section 1.1.2).³⁶ For them to possibly live with their fathers at a later age assumes a movement away from their first home. This study is concerned with the welfare consequences of child relocation, and children who have left their mothers to stay with their fathers may well be taken good care of. It could however be relevant to keep in mind that several studies point to the mother as the most important defender of child related consumption, such as schooling (see section 1.3.3).³⁷

What is known about the presence of the father of the child migrant? In 84 percent of the cases, he lives in the maternal household. In an additional ten percent of the cases the mother is married to the household head, indicating that the father (or stepfather) is considered to be the household head, in spite of not being permanently present. Some of these ten percent of fathers are probably (seasonal) migrants themselves, but the data provides no opportunity to distinguish those from the fathers who simply live part-time in another household, perhaps with another wife in the same village (polygamy is common, and so are multiple households). The last ten percent of migrant children have fathers who are neither living in their maternal households, nor part time household heads. It is still possible that some of them visit the

household from time to time, but one should assume that the likelihood that some of these fathers are themselves migrants is relatively high.

Another factor that could indicate the likelihood that the migrant child has in fact gone to stay with the father is with whom the child left. Would the 20 percent of the migrant children who are registered as not having a father permanently living in the same household be more likely to have left with a relative (presumably the father or a sibling) rather than a stranger or a friend? The data shows a striking resemblance between migrant children whose fathers live in the maternal household and those who don't. While 68 percent of the former had left with someone regarded as a relative or kinsman, 67 percent of the latter had. The share that had left with a complete stranger was also equal for the two groups (13.2 versus 13.8 percent).

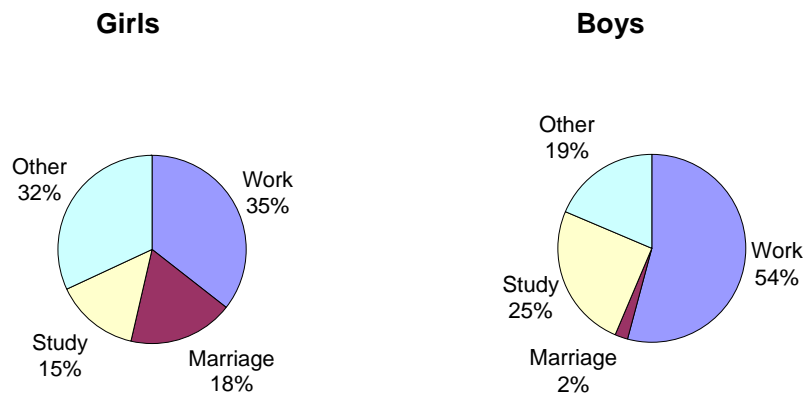
The motives given for leaving differs between the two groups. While 17 percent of children who used to live with their fathers had migrated to study, this was the case for as much as 27 percent of those with an absent father. This should indicate the possibility that at least some had moved to their father's household in order to go to school.

3.2.2 The child labor migrant

Does the child migrant work? The child migration survey is carried out in the child's village of origin and there is no way to really know. There are however some reasonably good indicators in the data. Importantly, the survey asked the mothers about the main motive for the child's relocation. Figure 3.1 shows the distribution on the four answer categories for girls and boys.

The figure shows that more boys than girls had left to study, but also to work. While many girls had left to marry, a conspicuously high share had left for "other reasons" than work, marriage and studies.

Figure 3.1: Main motive for migration of girls and boys 6-18 years old.



A second variable of interest is the question of whether the child is currently in school. Not surprisingly, children were not necessarily reported to be in school in spite of initially having left to study, and having left intending to work did not exclude school attendance for some. While 88 percent of those who had left to study were attending school, so were nine percent of those who left to work, and seven percent of those who had left for other reasons. Only 3 percent of those who had left to marry were attending school.

The main welfare concern for working children relates to “child labor”, i.e., according to ILO’s definitions, children who work too much and/or in a way that harms them.³⁸ The data allows for no exact operationalization of the ILO’s labor definition, but a reasonable proxy can be made. To make a strict definition of a working child migrant, only those who had left explicitly to work should be counted. In order to further enforce the welfare concern, all children who were currently attending school in spite of having left to work could be excluded from the sample. These children may well be working, but if they still have time to go to school the work load is probably not overwhelming. The main concern of this thesis is the welfare of the child, and going to school is a decent indication that the child is not being entirely

neglected and exploited. Nine percent (N=1207) of the children in the sample would correspond to this strict definition of a child labor migrant.

There are some fundamental problems related to the strict definition, though. Is it really so that all the other children who had left, and who were not in school should not be of interest to a child labor study? Or may they in fact also be working, but perhaps more often in the informal labor market or doing house work? Including also this group in the definition of a child labor migrant risks adding noise to the measurement, and therefore demands some good reasons. Two such reasons exist.

A most striking finding is that while the child migrants were about 50 - 50 boys and girls, the strict definition identify 48 percent of boy migrants as child laborers, but only 31 percent of girl migrants. This stands in stark contrast to the fact that only 18 percent of girl migrants go to school, while 29 percent of boy migrants do. The UNDP data presented in table 3 in section 1.1.3 also shows clearly that girls work more than boys, in particular those living away from home. Women's and girls' work is often not considered to be labor the same way as men's and boys' work is, and is therefore typically underreported in less precise surveys.³⁹

Ninety-seven percent of the girls who had left to marry were not attending school. In the UNDP data there are 38 girls under 18 who are married and live away from home, and none of them were involved in any school activities on the day of reference. Only three had not done any work, while the average work day for the group was 8.4 hours. It is therefore reasonable to believe that the girls who had left "to marry" were indeed currently enduring the working life of African housewives and mothers, a life that tends to be quite labor intensive, but typically not considered "labor" since the main share takes part outside the formal labor market.

Similarly, a relatively large number of children (particularly girls) had left for “other reasons” and also in this category few were in school. “Other reasons” tend to related to family issues (Soumonni (2000)). It is for instance common to place children with elderly or childless relatives, with a sister or brother who has just married, or with other kinsmen. In addition to having a social (networking) function, a core motive for this type of placement is an uncovered demand for informal child labor in and around the household. Increasingly, rural children, most often girls, are also sent to live with unrelated families in urban areas whose own children are sent to school, leaving the rural child with the typical child labor tasks of the household. This type of child placement is often characterized as fostering, but it may conceal a relatively harsh labor exploitation of children. While a child in paid domestic servitude will probably have been categorized as a child who left intending to work, this gray zone of foster care may not have been counted as such.⁴⁰ As shown in table 3 in section 1.1.3, non-school children living away from home work much more than non-school children staying in their rural households. In fact, a previous analysis of the UNDP data (made in collaboration with Blunch⁴¹) shows that living away from parents increased the work day by one hour and 20 minutes – three hours and nine minutes for girls living away from their parents and in an urban area (controlling for age).

A second and more liberal way to define a child labor migrant by this dataset is therefore to count all migrant children who are not presently in school. This definition will inevitably come to include children who are relatively well off, some who are working just a little while learning a trade and yet others who are looking for a job but are currently un- or underemployed (among the latter possibly also street children). Yet, this more liberal definition might, compared to the first and more conservative one, turn out to be more accurate since girls are more properly accounted for. In spite of being likely to do at least some work, it is however questionable if all the children who fall under this liberal definition of a child labor migrant fulfill the ILO definition of being child

laborers. Around 18 percent (N=2368) of the children in the sample fall under this more liberal definition. In the previous sample only 40 percent of the children were girls, while the new sample comprises 55 percent girls, and that should better reflect both the gender differences in school participation rates and what is found in the time allocation data from UNDP.

3.2.3 *The schoolchild*

The second dependent variable in this analysis is school participation. The schooling variable is simply defined by whether the child is currently reported to be attending school. If the child is a migrant but still attending school he or she will be included. Table 3.1 shows that only 12 percent of school children are migrants. Among the migrant children 23 percent are attending school, compared to 52 percent of children staying at home.

Table 3.1 Schooling and child migration status for children 6 – 18 years.

			Child currently in school		Total
			No	Yes	
Child migrant	No	Count	4918	5326	10244
		% within "Child migrant"	48.0%	52.0%	100.0%
		% within "School"	67.5%	88.2%	76.9%
		% of Total	36.9%	40.0%	76.9%
	Yes	Count	2368	712	3080
		% within "Child migrant"	76.9%	23.1%	100.0%
		% within "School"	32.5%	11.8%	23.1%
		% of Total	17.8%	5.3%	23.1%

Going to school does not exclude work. As shown in table 1.3 in section 1.1.3 rural school children also work, but only half the time that non-school children do.

3.2.4 *The "neither" child*

With the current definitions of school children and child labor migrants the reference category will be constituted by children who are neither migrants nor in school, in other words, children who stay at home without going to school. While the dataset gives no information about the work activities of these

children one can assume that the clear majority of the children in the “neither” category will be working, some with long work hours. Analyses of the UNDP data show that among rural children 6-18 years old who were not in school, eighty-nine percent had undertaken some sort of labor activity on the reference day, and that these working children had an average workday of more than seven-and-a half-hours (inactive children excluded). *It would therefore be reasonable to treat the “neither” category as the choice of having a child work (or at least at hand) in and around own household.*

3.3 Defining the independent variables

The theory presented in chapter 2 outlines the core hypotheses that together constitute the model for analyzing the child labor migration choice. There are five interacting components of the theory: *incentive*, *constraint*, *agency*, *information* and *socio-cultural and demographic controls*. Methodological approaches to measuring the relative impact of each one will be discussed in this section, with particular emphasis on the notoriously difficult definition of constraint in child labor research.

3.3.1 Incentive

What does the data tell about the incentives to schooling, local labor at home and child labor migration? Ideally, wage information and unemployment rates would be available for both local labor markets and labor markets at common destination sites, and returns to education could be estimated, for instance by discounting age earning curves. In this case these sizes are not known. But the data does provide some indicators that have previously been used to proxy at least some of the information required (Bhalotra and Tzannatos (2003)). For instance, the distance from the household to the school is a strong indicator of the accessibility of schooling in the first place, and thus incentive. If the nearest school is far away, costs of education indisputably will go up and the net

returns thereby shrink. In rural communities, local (child) labor demand is largely decided by agrarian production, and the relative amount of land cultivated is in the data registered as number of plots per household. Because children's work is not restricted to work on the family owned land, this variable is aggregated to the average village level, and should then serve as a decent measurement of local agricultural labor demand. In about one third of the villages there is cash crop production, and this is likely to increase wages and thus the incentive to child labor in the home community. In addition, the data provides information on cattle holding in the community, and since herding is one of the most typical child labor tasks throughout Africa, aggregating the share of households with livestock (smallstock not included) at the village level gives further information on labor demand. Analysis of the UNDP data shows that one of the most time demanding tasks for rural children is to fetch water. Whether there is a village pump or water pipe is therefore an important indicator of this local child labor demand. Finally, the presence of a local market should be considered since markets offer a considerable demand for child labor in Africa: children help in the production of subsistence crops for local sales, they help in conservation of food products to be sold, they work as market vendors, they cook and sell food to the market vendors and their costumers, they transport goods to be sold and carry purchased goods for buyers.

The main constraint in testing the incentive hypothesis by applying the available dataset is, as indicated in the previous chapter, the challenge involved in including demand side factors for the multiple destinations toward which children migrate. In the case of Benin these include several countries (notably Cote d'Ivoire, Gabon and Nigeria), but also several domestic sites (e.g. cotton producing areas in the north-east as well as smaller cities and the capitals Cotonou and Porto Novo). It can therefore only be established here that an external child labor market exists permanently, offering wage salaries that are above what can be expected in most rural areas.⁴² The weaker the local

schooling and labor incentives, the more attractive these external labor markets should appear, in spite of the obvious risks of labor migration. The data, however, contains information of whether the father lives away from the household. As mentioned in section 2.1.3, previous migration of relatives and kin facilitates chain migration by reducing relocation and installation costs, and by making it easier to find both a place to live and a job. In villages where a substantial number of fathers live elsewhere this may be an indication of migration being common. The share of fathers living elsewhere is thus aggregated at the community level and included as an indicator of previous migration and thus as an incentive to the relocation of children.

3.3.2 Constraint: Defining wealth

Are children put to work or even more drastically, sent away to work due to the (binding) poverty constraints of the parental household? The dataset does not provide information about household income, expenditure nor consumption. Such variables are difficult to determine in a reliable way in a poor rural African household, where income variability is considerable and barter economy is still important. Adding to this challenge, most people would hesitate to reveal information of this sort even to their nearest ones, since it is highly sensitive in a society where those with resources are at all times expected to support the needs of relatives without. Discretion with regards to means and resources is therefore widespread.⁴³ In such circumstances household wealth is instead often measured by visually assessing the quality of the main household building (floor, walls and roof), counting assets (typically radio, TV, telephone, fridge etc.), and by household landholdings.

To begin with the last, the data provides information on household ownership of land and livestock, as noted in the section on incentives. In addition to being potentially endogenous, landholdings and livestock also present another implication for child labor research: they are simultaneously an expression of wealth and an incentive for more child labor since land is highly labor intensive

(assuming imperfect labor markets). A wealth index for use in child labor research would thus be distorted if such labor intensive assets were included. In this analysis these indicators are considered of more importance to the assessment of incentives, and thus used at an aggregate level, as explained in the previous section.

The dataset contains the following variables that could be used to construct a reasonable wealth index, as there are no strong apparent arguments to include them in the regression equation in their own right:

House building characteristics:

- The quality of the main household building: The main distinction is made between houses with a cement floor and those with a dirt floor or similar, houses with brick walls, and those made of dried mud or another lighter material, and finally those with iron sheet roofs versus those with roofs made of less rainproof materials. Having brick walls is the most exclusive of the three, and only slightly more than ten percent of the household buildings do. Second comes having a cemented floor, something that almost half the houses have. Finally, two in three houses have iron sheet roofs.
- Number of rooms: It is reasonable to believe that a compound with many rooms (often as separate building units) in general would be a bigger and wealthier compound.
- Number of children per room: Ideally the number of rooms should be divided on the number of residents in the household in order to get a good wealth indication. In the absence of an exact number of household members in this dataset, the number of children 0-18 per room can be used as a proxy.

Facilities:

- Electricity: in this survey the only house facility that could serve as a good indicator of wealth is electric light, since water provision is basically

communal in the regions studied. Four percent of the households have electricity.

- **Transport means:** the survey also asks for means of transportation belonging to the household. Only one percent of the households possess a car, while 16 percent have access to a moped. Almost one in four have a bicycle, while 60 percent have neither.

Constructing a wealth index with these indicators is not straightforward. Wealth indexes using similar datasets are typically constructed around a simple property count or also based on house quality features like the ones available here. While a simple house quality index is also a possibility here, there is reason to believe that the index could be improved by including also some of the other indicators. The main challenge becomes to weigh each factor so that it in a reasonable way expresses what share of the index total it deserves. This type of decisions must clearly result from some subjective considerations.⁴⁴

Table 3.2 Indicators and their weight in the wealth index. (Numbers in parenthesis show the share of households with a certain index value.)

	Score 0	Score 1	Score 2	Score 3
Roof quality	Dirt, straw or other inferior roof materials (32%)	Iron sheet (68%)		
Wall quality	Dirt, bamboo or other inferior wall materials (87%)		Brick walls (13%)	
Floor quality	Dirt, wood or other inferior floor material (57%)	Cement floors (43%)		
Number of rooms	Less than 6 rooms (84%)	6 rooms or more (16%)		
Rooms per child	< 0,5 room per child (22%)	0,5 – 0,9 room per child (29%)	> 1 room per child (50%)	
Electricity	No electricity (96%)		Household has electricity (4%)	
Transport means	No vehicle (60%)	Bicycle (23%)	Moped (16%)	Car (1%)

Table 3.2 shows the weight assigned to each indicator in the wealth index. Four of the 12 possible points on the index were determined by the quality of the main household building. Since having brick walls was clearly more exclusive than having iron sheet roof or cemented floors, brick walls gives two of these

four points. One point could be achieved for having iron sheet roof and one for cemented floors.

An additional 3 points could be achieved for the size of the household compound. Size is clearly more interesting relative to the number of habitants than what a plain room count would show, but it matters also in itself. The data has no perfect information on the total number of household members, so the number of children 0- 18 borne in the household – counting both those living in and the migrants – was used as a proxy. While 1 point could be achieved for having between half-a-room and 1 room per child, an additional point was given for having 1 room per child or more. These limits for each score range were made by dividing the children into 3 reasonably equal groups.⁴⁵ In addition to the points given for a high rooms-per-child ratio, particularly large households were assigned one extra “luxury” point. While having up to 6 rooms was relatively common, more than that was rare: while as many as 14 percent of households had 6 rooms, only two percent had more.⁴⁶

Seven out of the 12 possible points of the index are thus related to the household buildings and the compound. The remaining 5 points were based on facilities that do not only have value in themselves but that can also be used for further income generation.

Electricity is clearly a luxury good, and the most typical way to profit on electricity in many parts of rural Africa is by conserving foodstuff for sale or produce ice. Electricity can be provided by a generator or a power line. In both cases, having access to electricity does not only indicate the capability to cover the costs wiring and connecting to local power supply lines or purchasing a generator. It also means the ability to pay electricity bills or fuel for the generator. Because this is such a strong wealth indication, electricity is given 2 rather than just one point.

Finally, similar to electricity, the access to a motorized vehicle suggests the capability to invest, a possible source of income, and the confidence in being able to continue to buy gas. While 3 points were awarded households with a car (which is very exclusive in rural Benin), two point were given for owning a moped. Even a bicycle is a luxury, and households with a bicycle were therefore given one point.

Figure 3.2 Distribution of children on the wealth index scores, in percent and cumulative percent.

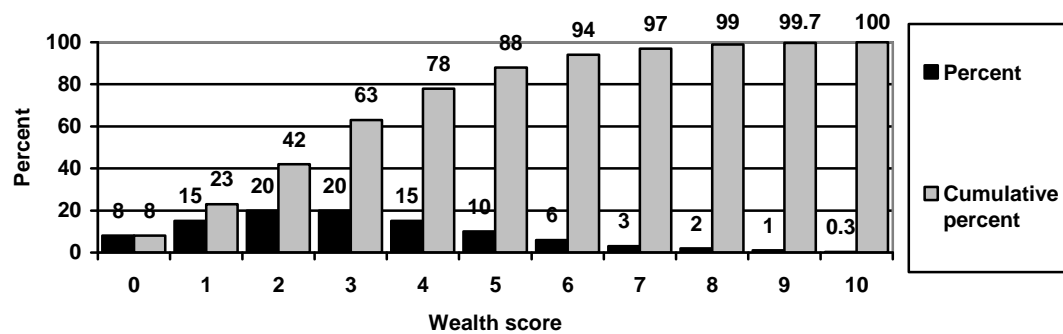


Figure 3.2 shows the distribution of children on the various wealth scores. No household got 11 or 12 points, only a few score 9 and only 39 children live in households with score 10. Almost two in three children live in households with scores 0-3, and then the share drops rapidly towards score 7.

3.3.3 Constraint: Wealth measurements and endogeneity

Assessing the impact of poverty constraints on child labor supply is perhaps the most challenging area of child labor research since the variable quite likely is endogenous to some extent. There are five ways to relate to this possible problem:

First, it is possible to leave the wealth measurement out of the equation all together, as done by Grootaert (1998). However, as poverty constraint is of central importance to the analysis of both child labor and child labor migration, this approach would strongly limit the ability to test most sensible theories.

Second, several authors have made attempts of disentangling the share of household income stemming from child labor from the adult share (Ray (2000), Cartwright (1996)). This is problematic in two ways: (i) the value of the child's contribution is difficult to assess, in particular in rural Africa where most child labor is not remunerated and takes place in and around the household, and (ii) Bhalotra (2000) presents evidence of adult and child labor supply being jointly determined, thus the adult share of household income is not exogenous. As Bhalotra and Tzannatos (2003) point out (and as mentioned in section 1.3.3) what appears to be constraints leading to more child labor may in fact be an expression of the limited altruism of parents and guardians.

Third, the wealth indicator could be simplified by turning it into a dummy variable indicating whether or not a household falls into the poorest quintile of households, and this is also tried by Grootaert (1998). But as Bhalotra and Heady (2001) argue, the variable he constructs is still potentially endogenous, and in addition considerable information is lost. Ray (2000) creates a dummy *and* subtracts children's contribution, but does not avoid endogeneity stemming from the joint determination of child and adult labor supply.

Forth, Bhalotra and Heady (2001) and Bhalotra and Tzannatos (2003) argue that the best option is to instrument the wealth indicator, and that way reduce the effect of possible endogenous features. The challenge is, however, to find instrument variables that fulfill the basic requirements for a good instrument: (i) to explain a substantial share of the wealth score, without (ii) being directly correlated with the error term stemming from regressing child labor or child labor migration on wealth (Kennedy (2003):p168). This is difficult in child labor research since most available variables are neither very good indicators of household wealth, nor can lightheartedly be omitted in a child labor (migration) equation. Bhalotra and Heady (2001) use community level indicators to instrument household consumption: going wage rate for adult agricultural workers, the presence of a railway line, a market, electricity and piped water.

Others have used the presence of a shop, a post office, an index of land inequality etc. None of these indicators are uncontroversial in a child labor/child labor migration regression, since they are likely to violate the two basic requirements for a good instrument: first, they are not likely to explain much of the variation in household wealth, and second, most of them potentially represent important incentives and thus correlate directly with the child labor versus child labor migration decision. As explained in section 3.3.1, a market is a great incentive for child labor since various income earning opportunities exist in and around markets. A railway line or station would offer income opportunities through sales of food stuff and porting – and would moreover be a way out and an inspiration to aspiring migrants. Piped water has a strong impact on fetching water, which is one of the most time-demanding child labor tasks in rural Africa.⁴⁷ If child and adult labor supply are indeed jointly determined, adult wage rates should be of direct concern to the child labor decision. In the dataset there is also available information on local health institutions, organizations, information sources, and other infrastructure. Common to them is, however, that even though they may contribute to explain some of the local wealth variation, they would not be very strongly correlated. Moreover, many cannot and should not be omitted in the regression equation. On top of this, the inherent weakness of using community level instruments is, as stressed by Bhalotra and Tzannatos (2003:p22), that they inevitably will reflect inter-village variation and lead to a loss of information on intra-village differences.

The fifth and last option is to leave the wealth indicator in the regression and accept that it may lead to a potential upward bias in its coefficient. While endogeneity is clearly an element of concern in child labor research, is it equally so in the study of child labor migration? Two questions are essential in exploring this issue. First: is it as easy for the parents to control the revenue of child labor when the child lives away from home, and second, was the child migrant a net-consumer or a net-contributor to the parental household before

departure? There are no clear answers to either question, but some deliberations can be made. To start with the last question: In poor rural households, children gradually move from being net-consumers to become net-contributors to the parental household. At what age the transition happens of course varies, but the poorer the household, the earlier the transition is likely to take place. In the context of child labor migration, children are probably more likely to leave home when they are close to or passed the transition stage. The preferences of parents and children may divert at this point: parents may be more interested in promoting the labor migration of children who can not contribute much to the household economy while staying where they are, while children may try to affect the bargaining game in the opposite direction: as they realize their own income earning potential they may be increasingly interested in getting to a situation where they can also get to control more of their own earnings.

Who controls the income of the child labor migrant? While the working children who live in their parental households in rural Benin are unlikely to gain complete control over the profit of their own labor, child labor migrants are quite a heterogeneous group with a much less straightforward financial relationship to the parental household. Child labor migrants can be divided into seven categories: (i) children who emancipated early and have left to start their own individual lives and households (including those who left to marry); (ii) girls out earning their dowry (including many child domestics), and in certain areas boys earning for the bridal price; (iii) children working for free for relatives and kin; (iv) street children and unemployed children who live on a day-to-day survival basis; (v) children on rite of passage or seasonal migration who may or may not contribute to their parental households upon return (typical for agricultural laborers); (vi) children who send small amounts of money home every month to support their parents (e.g., some child domestics); and (vii) children in apprenticeship arrangements. The first four groups are not of much concern, since there is not likely to be transfers from these children to the parental household. Groups (v) and (vi), on the other hand, are problematic.

Unfortunately it is impossible to know from the data how many children there are of each kind.

As discussed, there is a second aspect of endogeneity related to children working away from home: The children in the first six groups may have relieved the parental household of the burden of supporting them. This assumption however depends on whether they were all net consumers in the parental household in the first place. While many of the youngest labor migrants probably were, the length of the work day of older children who are not attending school suggests that many were also net contributors. If a household in addition has many elderly members, the younger will shoulder a larger relative share of the support burden.

Finally, many of the children in group (vii) are likely to remain consumers in the parental household economy also after departure. In Benin, a common alternative to formal education is to send children away to live with a craftsman in order learn a trade by working.⁴⁸ This informal apprenticeship arrangement is in many cases highly exploitative, and has been a main concern of the ILO. Moreover, the parents pay for the tools, sometimes for training, food and lodging, and on top of this a so-called “liberation fee” is required when the term of apprenticeship is over and the child is ready to start his or her own business. Since these apprentices are not likely to be registered as “in school”, this group will – and rightfully so – have been captured by the definition of a child labor migrant.

Table 1.3 showed that rural school children contribute to their household with an average of two-and-a-half hours of work daily, while consuming food, school fees and possibly other household resources. Children who are at home but not in school contribute on average with five hours of work daily, and do not consume school fees. While the latter are clearly the ones biasing the wealth indicator the most, their work day is relatively short, and the returns to

their work are likely to be meager in a rural setting. It is more difficult to assess the relative impact of the child migration versus the schooling choice to the household economy since the net benefit to the household is so unpredictable in the former case.

Will the poorest households benefit more, relatively speaking, from their child labor migrants? Poor households may be more likely to request financial help from their children, and to search for types of labor migration that lead to income transfers to the household. Better off households may have the freedom to evaluate the different incentives to the various child labor migration options and perhaps be in a position to choose options that give long-term benefits rather than short-term return (e.g., apprenticeship investments or strategic fostering to strengthen kinship ties and thus the households informal insurance arrangements). The reverse may also be true. A household in crisis that can no longer support its children is in no position to negotiate the fostering conditions of a child. Such a household is also likely to be resource poor and thus have fewer choices of alternative migration arrangements. Households in less desperate circumstances can afford waiting until a good offer comes along, and to negotiate its terms. Such a household would also be able to invest in the relocation of the child to a labor market further away where returns are higher (probably Gabon or Cote d'Ivoire). In such cases, the better off households will benefit more from their migrant children, and wealth differences would thus be strengthened instead of weakened.

There is a variable in the dataset that could perhaps give at least an indication of the economic effects of having a child labor migrant in the family: The survey asked when the child had left. If a child labor migrant contributes to improving the family economy, it could be argued that the economy should be gradually better for each year the child contributes. In other words, the longer the child has been away, the better the family economy. By regressing wealth on time the child labor migrants has been away, controlling for age, it becomes

clear that the correlation between the two is indeed weak as well as statistically insignificant.

Household wealth is a critical variable to child labor theory, and also to the theory of child labor migration. But it is challenging to assess its impact given the likelihood of endogeneity. The choice here is between four options, each with its problems: (i) leaving it out; (ii) ignoring the joint decision of adult and child labor supply and try to subtract an estimate of what could be the child labor migrant's income share from the wealth indicator (an exercise that is not very likely to be accurate in this case); (iii) instrument the wealth indicator using poor instruments that explain only a marginal share of wealth variation and in addition are correlated with the error term, or eventually; (iv) leaving it in, recognizing the possible upwards bias produced by endogeneity. The last option is chosen based on the discussion in this section. By making this choice it is explicitly recognized that the particular wealth index created might be vulnerable to endogeneity in individual cases. Notably, it is common to pay agricultural child workers in kind, often with a bicycle.⁴⁹ The bicycle counted in the wealth index could thus in some cases be the wages of a previous seasonal child migration. The monthly contributions from a child domestic servant in a city could potentially be spent by a parent (perhaps not very altruistic) on gas for the moped, while the salary brought home from a cocoa harvest season in the Cote d'Ivoire by a loyal child could have been spent on upgrading the house with an iron sheet roof. The wealth indicator needs to stay, and the main issue remains to interpret the findings with the potential bias in mind.

3.3.4 Factors affecting constraint

Bhalotra and Tzannatos (2003) refer to credit availability as an important mitigating factor for relaxing (binding) household constraints. The data provides information on the most accessible credit for women in the community. The most common place to get credit is the so called “*tontine*”, an

informal rotating saving and credit arrangement organized by small groups of women (rated as most available in 49 percent of communities).⁵⁰ The more organized villages may have *community funds* available (most available in 11 percent of communities), but these are only found in villages of the three upper wealth quintiles. Only 18 percent of communities have more formalized access to credit, in Benin in the form of local branches of a savings and loan cooperative called “*CLCAM*”. Twenty-two percent of communities have no access to credit. The three types of credit are qualitatively different, and it would therefore make sense to test the impact of all three. The credit variable is thus recoded into three dummy variables: Tontine, Community fund and CLCAM.

Family size and composition could be important elements in assessing household constraints, with overall wealth held constant. Again, however, child labor research faces problems of endogeneity related to indicators of household size and composition, since children’s contributions in and around the household must be assumed to encourage fertility. Bhalotra and Heady (2001) recognize this, but still leave various indicators related to household size and composition in their regression. Cigno, Rosati and Tzannatos (2000), decide to leave it out for the same reason. While child labor migration most likely is provoked by high fertility, there is perhaps an even greater reason to fear that the migration of children encourages parents to have more children. In fact, the early “emancipation” of children frees up space and (if the child was a net consumer) resources, and in addition some migrant children send money home. Moreover, it is likely that a family that has early expulsion of children as a strategy will decide to have more children to ensure that the typical child labor tasks in and around the household will continue to be taken care of when an older child leaves.

High fertility no doubt provokes child labor migration, both due to resource constraints and due to the fact that limited land only can be divided on one or a

few inheritors. A child rich household is moreover likely to encourage the spread of children on professions as well as geographical areas as part of a joint household portfolio management strategy, and thus a risk mitigation effort. In spite of this, the risk of endogeneity is in this case so obvious that indicators of household composition and size are left out. This is also where the following analysis differs from several earlier child labor studies, but it should be consistent with the well documented deliberations explained by others, such as Rosati and Tzannatos (2003).

3.3.5 Agency

Beyond income, it is difficult to assess parental altruism directly by the data at hand. It should be possible, however, to detect some variations in household behavior based on variations in the features of the child's agents. The (relative) age of the mother and of the father/household head have been used as such indicators, and so have the mother's and father's education level. Very few mothers are educated at all: only 9 percent have attended primary school and only 2 percent higher than that. Mother's education is therefore given scores from 0 – 2 points. Thirty-two percent of fathers are educated, and scores 0-4 are given to distinguish no education from primary, secondary part one, secondary part two and higher education. With household wealth held constant, it is also interesting to look at the effects of having a female household head, although this may also, as pointed out by Bhalotra and Heady (2001), serve as an indicator of household vulnerability beyond wealth (see section 1.3.3).⁵¹ Finally, some authors have proposed to include the rank of the child in the child labor equation, suggesting that the first borne is given preferential treatment.⁵²

It is complicated to interpret findings on altruism indicators since one can not expect that the exact western definition of altruism is shared by Beninese peasants. While school is generally perceived as good, one cannot exclude the possibility that at least some types of child labor and child labor migration are

similarly perceived as privileges – which one being the greatest depends on the local incentive structure.

3.3.6 Information

Does ignorance play a role? Are there any good and accessible information sources in the village, and to what extent do parents know how to utilize the resources and information at hand? Information about opportunities and incentives, as well as capacity to use information to make rational decisions and cover own needs are factors that interact with incentives and constraints. A local language community radio is a good indicator of information access, in particular in rural Benin where NGO and Government programs frequently use local radio broadcasting to sensitize the population on core development issues like the dangers of AIDS, the health benefits of good hygiene, the virtue of saving and investing, the importance of schooling and the dangers of child labor, trafficking and child fostering. Also, the indicators for both parental age and education must be seen as proxies to the ability of parents to understand and utilize available resources and information.

3.3.7 Socio-cultural and demographic factors

To account for cultural differences, variables for religion and zone are included. While ethnic group is often used to control for cultural differences, these are so many and varied in Benin that it might confuse the equation.⁵³ Instead, variables for being an Animist or a Muslim are included, keeping Christians as reference group. Similarly, dummies for the geographical zones Central and North are included, keeping the South as reference group.⁵⁴ The zone variables are also likely to catch differences in communication, production, and demography that are not accounted for elsewhere.

Child age is included and so is age squared in order to capture the likelihood of a non-linear relationship between age and child labor migration and schooling. It is of course difficult to interpret the coefficient for the quadratic of age in a

multinomial logit model, since the model does not assume a linear relationship between the variables. Most studies still include the variable also when applying the logit model.

Gender is an important dimension in child labor research, in fact, so important that different regressions should be run for boys and girls.

3.4 Regression model

Economists have used several limited variable models in their empirical analysis of child labor (and schooling) choices: univariate and bivariate probit, multinomial logit and tobit. The multinomial logit is this far the most commonly applied model, in spite of its basic assumption of independence of irrelevant alternatives (Grootaert (1998:p33)). The multinomial probit, on the other hand, is restricted by the model being capable of handling only a small number of alternatives (Grootaert and Patrinos (1999:p5)). The probit model moreover predicts best when the outcome distribution is fifty-fifty, and therefore consistently under-predicts the incidence of child labor where it is less common (Blunch and Verner (2000:p14, footnote 8)) Grootaert (1998) suggests using a sequential probit. He argues that this approach, in addition to not countering the limitations of the two others, also allows for a variation in explanatory variables for each choice. However, it is disputable as pointed out by Cockburn (2000:p11), whether one can reasonably assume a given sequence of choices. Is schooling always the preferred choice over a combination of work and school, then work only and finally working at home or idling? Settling with a sequential probit, these assumptions must be accepted, and that does to many appear as too simplistic. The multinomial logit thus remains the preferred model in child labor research.

4. Analysis

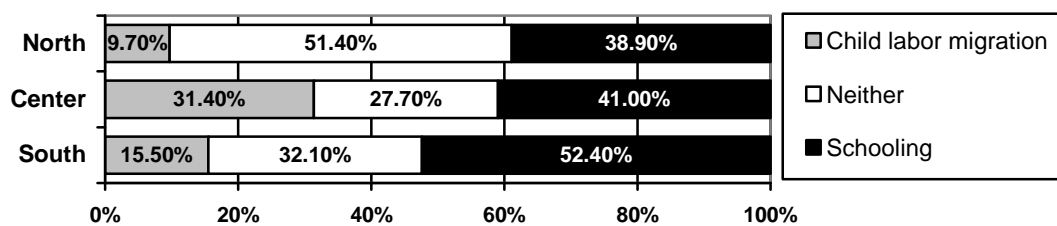
This chapter presents the empirical analysis of the Benin data, and scrutinizes the impact of altering variable values within the main areas of the theory: incentives to school and work, poverty constraints and agency related features. Table 4.1 presents the descriptive statistics for the data: it summarizes the maximum, minimum and mean values of the indicators that are part of the regression equation as well as the standard deviations and sample sizes.

Table 4.1 Descriptive statistics for the dependent variables

	Minimum	Maximum	Mean	Std. Deviation	N
Incentive					
Average number of farms in village	.00	3.00	1.8163	.63088	13324
Cash crop production	0	1	.33	.470	13228
Share of households with livestock	.00	1.00	.5021	.37079	13324
Village has pump or piped water	0	1	.52	.500	13228
Village has daily market	0	1	.25	.431	13228
Share of fathers living away	.00	.55	.1617	.13417	13324
Distance from household to school	1	4	1.54	.916	12562
Constraint					
Household wealth index 0-12 points	0	10	3.08	1.984	13257
<i>Credit:</i>					
Tontine	0	1	.49	.500	13324
Community Fund	0	1	.11	.316	13324
CLCAM	0	1	.18	.384	13324
Agency					
Female-headed household	0	1	.12	.322	13324
Mother's age	17	68	37.03	8.607	13014
Mother educated	0	2	.13	.387	13324
Household head age	18	99	48.03	12.694	13199
Household head education	0	4	.45	.771	13324
Rank of child (1 is youngest)	1	9	2.23	1.336	13324
Information					
Local radio	0	1	.11	.311	13228
Socio-cultural and demographic factors					
Child age	6	18	11.48	3.735	13324
Child age squared	36	324	145.74	89.677	13324
<i>Religion:</i>					
Muslim	0	1	.13	.337	13324
Animist	0	1	.47	.499	13324
<i>Zone:</i>					
Center	0	1	.25	.436	13324
North	0	1	.31	.461	13324

Table 4.2 shows the regression results. There is an endless number of possible value combinations. In order to study the effects of altering the values of the indicators that are most importance to the theory, fixed values must be decided for the remaining variables. A standard case is therefore defined as a starting point: First, the Central region is selected, since this region comes out as the area with by far the most child labor migration. As Figure 4.1 shows, 31 percent of children in the Center is registered as child labor migrants, compared to 16 percent in the South and 10 percent in the North. Schooling rates are also low, 41 percent, although they are even lower in the North, where only 39 percent of the children attend school. In the South there is a 52 percent schooling rate.

Figure 4.1 Share of children 6-18 who are labor migrants, attending school or doing neither.



The central region is thus particularly important to target with policy interventions. In the Center the majority of families are Animists, so Animism is chosen for religion. General mean values are used for most village features, as indicated in table 4.1. The standard case child thus lives in a village with the following characteristics: an average amount of land per household of 1.816 plots, no cash crop production, livestock owned by half the households, there is piped water or a village pump, but no daily market. Sixteen percent of fathers live away from the household, the most available credit option is the tontine, and there is no local community radio. The child has one younger sibling, the mother is 37 years old and the household head is 48. The mother has no education, but the household head has completed primary school. The household wealth score is 3 and the distance to school is the average of around 1 km.

Table 4.2 Likelihood of being a child labor migrant and a school child for boys and girls 6-18 years old. (Multinomial logistic regression)

	Child labor migration				School			
	Girls		Boys		Girls		Boys	
	<i>Coefficient</i>		<i>Coefficient</i>		<i>Coefficient</i>		<i>Coefficient</i>	
Intercept	-4.550	***	-6.383	***	-2.724	***	-3.541	***
Incentive								
Average number of farms/village	0.202	**	0.016		-0.292	***	-0.049	
Cash crop production	0.210	**	-0.166		-0.211	**	-0.215	***
Share of households with livestock	-0.232		-0.124		-0.262	**	-0.794	***
Village has pump or piped water	0.031		-0.185	*	-0.159	**	-0.048	
Village has daily market	0.273	**	-0.006		0.254	***	0.212	***
Share of fathers living away	-0.286		0.345		-0.479		2.064	***
Distance from household to school	-0.042		-0.103	*	-0.260	***	-0.285	***
Constraint								
Household wealth index	-0.063	***	-0.019		0.146	***	0.156	***
<i>Credit:</i>								
Tontine	0.193		-0.458	***	0.194	*	-0.305	***
Community Fund	0.304	*	0.080		0.395	***	0.004	
CLCAM	0.187		-0.454	***	0.054		-0.238	**
Agency								
Female-headed household	-0.190		0.260	*	-0.347	***	-0.220	*
Mother's age	-0.010		-0.015	**	0.010	*	0.007	
Mother educated	0.254	**	0.159		0.302	***	0.298	***
Household head age	-0.005	*	-0.005		-0.003		-0.002	
Household head education	-0.006		0.174	**	0.392	***	0.403	***
Rank of child	-0.001		-0.020		-0.017		-0.058	**
Information								
Local radio	0.006		-0.726	***	-0.305	**	-0.014	
Socio-cultural and demographic factors								
Child age	0.550	***	0.934	***	0.684	***	0.926	***
Child age squared	-0.015	***	-0.027	***	-0.034	***	-0.041	***
<i>Religion:</i>								
Muslim	0.513	***	0.326	*	0.113		0.067	
Animist	0.109		-0.179	*	-0.413	***	-0.406	***
<i>Zone:</i>								
Center	0.563	***	0.804	***	0.361	***	-0.409	***
North	-1.188	***	-1.112	***	-0.275	**	-0.562	***

4.1 Incentive

To what extent do incentives to work in the local community, labor migration and schooling affect the decision to send children away to work or to school? Indicators of these three types of incentives are considered in the analysis, and the results are mixed.

4.1.1 Incentives to work around own households

According to the UNDP time allocation survey, five types of labor are particularly common for rural children: work on subsistence farms and in commercial agriculture, herding, fetching water, and work related to local markets. Indicators of the labor demand to each one are included in the regression.

Looking first at the effect on schooling, the more **farm plots** there are in the village, the less girls go to school, as anticipated, and as found by Nielsen (1998) and Cockburn (2000). The effect is quite strong: A ten-year-old in our constructed show case situation would have a 68 percent likelihood of being in school in villages without farm land, and her school participation rate drops by around 9 percent for each additional plot owned per household, to 41 percent in villages with an average of 3 plots per household. For a 14-year-old, the effect is equivalent. Surprisingly the amount of farm land in the village does not have the same impact for boys schooling. It is not statistically significant, and had it been, the impact would have been marginal.

If **cash crop** is grown, however, both boys and girls are less likely to go to school. This is consistent with the results of Nkamleu and Kielland (2006) who find that additional cash crop land reduces the probability that children are able to combine school with work on the cocoa farm, generally reducing the schooling probability. Unlike work in subsistence agriculture, cash crop production more often means payment in cash, and the marginal return to labor

is presumably higher. This is also the likely reason why cash crop production serves as a disincentive to schooling in this case. To the ten-year-old girl, the probability of going to school drops from 52 to 45 percent if a cash crop is grown in the village, for a 14-year-old from 31 to 24 percent. For a 10-year-old boy the probability of schooling falls from 59 to 55 percent, for a 14-year-old from 41 to 38. While cash crops most often attract boys' labor, this may not be the case for cotton, the most common cash crop in Benin. Harvesting cotton is for instance much less heavy than harvesting a male dominated crop like cocoa. It is also possible that girls schooling is more vulnerable to alternative incentives since boys education traditionally has been considered to be more important. Boys' participation in cash crop production may furthermore make it necessary for girls to substitute for boys' labor in other labor tasks in and around the household.

Child labor demand in **herding**, as indicated by the share of households with livestock in the village, also shows the anticipated effect: it reduces school participation for both boys and girls. This is consistent with what Canagarajah and Coulombe (1998) find for Ghana, but not with Blunch and Verner (2000), who find that ownership to cattle and goats increase school participation for both boys and girls in spite of also leading to more child labor. As expected, the effect is stronger and more systematic for boys, since larger livestock predominantly is a male trade. In the case of a 10-year-old boy, the probability of going to school drops from 68 percent in a village without livestock to 59 percent in the average village where about half the households have livestock, and to 50 percent in a village where all households have livestock. Impact is similar for the 14-year old whose schooling likelihood drops from 50 to 41 to 32 percent. The impact on girls is more modest. The probability of schooling for 10-year-olds drops from 54 percent in the village without livestock to 50 percent where every household have it, and for the 14-year-old from 32 to 30 percent. It should be mentioned, however, that cattle in particular is much more common within certain ethnic groups in Benin (notably the Fulani), and that

these numbers probably to some degree also reflect certain cultural features that stand unaccounted for in this regression.⁵⁵

As mentioned, rural children in Benin spend a lot of time fetching **water**. It was therefore anticipated that piped water or the presence of a village pump would reduce the local child labor demand and thus increase schooling. While statistically insignificant for boys, the effect for girls goes in the opposite direction of what was expected. Contrary to what Cockburne (2000) finds, access to a village pump or piped water reduces the probability that girls attend school by four percent for both 10 and 14-year-olds. The odd finding might be explained by spurious impact from other child labor demanding community infrastructure. But it is also possible that the availability of water in the community increases the chance that children are used to fetch it. When the water source is very far away adults may more often be doing the job.⁵⁶ A similar observation was reported by Draper and Cashdan (1988) with regards to children's participation in hunting and the distance to the hunting field.

The direction and impact of the presence of a daily **village market** is not as expected either. While certainly child labor demanding, the market still contributes to an increase in school participation for both boys and girls. It is easier to find good explanations in the market case than in the water case. One would be that the market represents a community wealth and infrastructure level that is unaccounted for by the household wealth index: if there is a daily market in the first place, the purchase power of the inhabitants is probably high relative to the villages without a (daily) market. In addition, it generates local revenue. It is not unlikely that some children use the market as an opportunity to earn their own school fees.

How do these five child labor demanding sectors relate to child labor migration? The most striking finding is that they are far less relevant in explaining child labor migration than schooling. For boys only the availability

of piped **water** or a pump is (barely) statistically significant, and has the opposite direction of expected. A 14-year-old boy in a village with piped water is 4 percent less likely to be a labor migrant, a 10-year-old two percent less. Subsequently it seems that the absence of water facilities may be a push factor for labor migration, probably expressing (infrastructural) local poverty more in general.⁵⁷

Three indicators are statistically significant to girls' labor migration, and none of them in the predicted direction. While local **farm land**, **cash crop** production and daily **markets** were indeed expected to be child labor demanding features that would retain children from labor migration, they all have the opposite effect. While the increase in the average number of plots in the community had a strong and expected negative impact on girls schooling, not all the non-school girls were working on the local farms. In fact, the share of girls who migrated increased more than the share of girls who were working locally. For 10-year-old girls, the probability of working (or idling) in their own local communities increased from 22 to 32 percent when the average number of plots per household went from the minimum of 0 to the maximum of 3. This finding among the younger girls would actually support the "wealth paradox": while farm land represents wealth, it also increases child labor demand. However, the wealth paradox will not explain the following findings: the probability of 10-year-old girls to be labor migrants goes from 10 to 27 percent when the amount of land increases from the minimum to the maximum. Moreover, for 14-year-olds the impact on local child labor was almost disappearing: the probability of working locally only went from 27 to 29 percent, while the share of girls migrating rockets from 25 to 50 percent. *More than representing an incentive for local labor, the increasing amount of farm land appears to be a strong disincentive for staying, in particular for older girls.* The predicted probability of enrollment of 6-year-old girls in communities without farmland is as high as 61 percent, but only 37 percent in communities with the maximum land score. Quite likely will many of the girls

who never get to go to school in agriculture intensive villages be highly vulnerable to labor migration later on. But moreover, those who did study may have few employment options outside farming in such places, and may also opt to leave to find the types of work for which they feel qualified.⁵⁸ Again there is a possibility that villages with many plots have social and cultural features that encourage the labor migration of girls. It must be assumed that this possibility accounts for at least some of the tremendous impact the amount of farm land has on girls' labor migration.⁵⁹

The impact from **cash crop** farming is also strong, and stronger on increasing the labor migration (of girls) than on local child labor. The 10-year old girl's probability of labor migration increases from 19 to 25 percent if cash crop is produced in her community, for the 14-year-old from 40 to 48 percent. The reason might be that cash crop farming brings in middlemen and traders from urban areas, and that way improve opportunities to find contacts, transport and work elsewhere. Increases in local child labor are only marginal, and for 18-year-olds in fact reversed. The impact of cash crop farming was shown to reduce schooling, but is only statistically significant to boys' labor migration if accepting a 15 percent significance level (Sig. 0.116). It would then have the anticipated effect, reducing labor migration (marginally) and increasing local labor. This would make sense since cash crop farming predominantly is a male trade. Most other studies do not include a particular variable for cash crop. Nkamleu and Kielland (2006), however, similarly find the amount of commercial cocoa farm land not to be statistically significant to the child labor participation in cocoa farming.

As mentioned, the **daily market** increases the school participation of girls, but it also increases their labor migration. The probability of girls (only) working in the local community is thus strongly reduced when there is a market in the village. *The conclusion must be that the indicator "daily village market" is erroneously defined as an incentive to stay – instead it appears to be an*

incentive to leave. How can this be? Local markets represent contact with the outside world. As was mentioned in the introduction, it is often local traders who bring children along from their villages when going to see their trade partners in more urban areas. Rumors about opportunities and job offers spread quickly in a market place, and the mediation effect cannot be underestimated. Finally, as bad as it may sound, many of the young girls working in local markets are also “products for sale” themselves, with their mothers and kinsmen often mediating their services to clients from outside. Customers from out of town often stop and negotiate when they see a girl they like, or deliberately go to villages where they can “shop” for a servant in the local market.⁶⁰ This way markets may strongly facilitate the labor migration of girls: they reduce both travel costs and the costs of finding a job, they may ameliorate the perception of risks since the mothers may get to meet the prospective employers, or alternatively, the mother is more likely to know the person acting as an intermediary when he or she is a trader who either belongs to the village or visits the village frequently.

In conclusion, children leave in spite of incentives to work in their home communities. In a limited variables regression these results may stem from failure to include more community level infrastructure variables of relevance, making the variables intended as “incentive indicators” bearers of spurious effects from conditions unaccounted for. However, it is also possible that many of the most common labor demanding sectors in rural areas indeed function more as disincentives to stay, given the grueling work conditions they offer – like walking long distances to fetch water, or working in dirt and heat on the local farms.

4.1.2 Incentives to labor migration

The analysis results indicate that local markets provide multiple incentives for child labor migration, notably for girls. Other incentives facilitating for child labor migration have been difficult to define, but it was hypothesized that the

share of fathers who were absent from a community's households could indicate whether many fathers from a village were already migrants. If many fathers are migrants, it is logical to assume that they make chain migration easier because they can facilitate both travel and job search, and that way reduce relocation costs.

The findings do not support this hypothesis. While Canagarajah and Coulombe (1998) found that the father being absent from the household led to more work and less schooling for the household children, the share of absent fathers in this analysis instead drastically increases the probability that boys go to school. The probability of enrollment of a 6-year-old boy increases from 33 to 61 percent when the share of absent fathers increase from 0 to 55 percent, the minimum and the maximum values of the villages sampled. For a 10-year-old the probability goes from 52 to 76 percent and for a 14-year-old from 34 to 58 percent. While this could of course be interpreted as a possible sign of maternal altruism, a different possibility must also be considered: if the absent fathers are indeed overwhelmingly labor migrants their transfers may help support boys' schooling (given the likelihood that the equation's wealth measurement does not fully capture all aspects of household income). Also, migrants may better understand the value of education, and therefore try to ensure that their sons are better prepared if they should choose to migrate later on.⁶¹ The fact that many communities throughout Africa are largely funded by such transfers is well known: the most striking finding is perhaps that it so clearly favors boys.

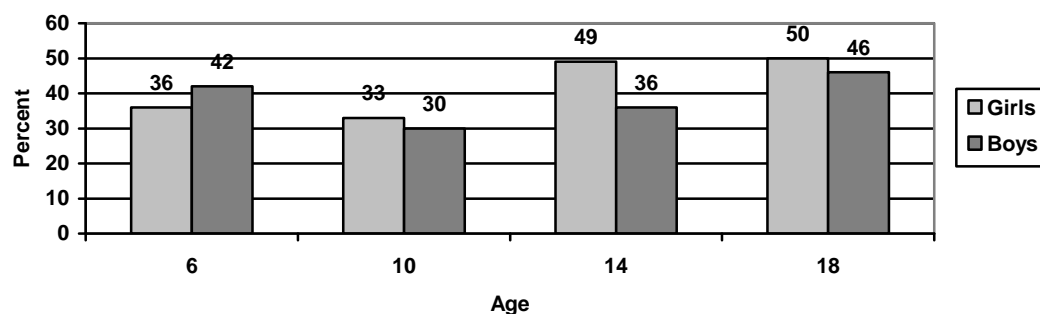
A notable difference between the data used by Canagarajah and Coulombe (1998) and this study is that the schooling definition in this analysis also includes children who live away from the maternal household while going to school. As stressed in section 3.2.1 the share of children who had migrated to study was much higher among those living in households without a father than

those with. This suggests that they might have moved to the fathers' new household precisely to attend a school in his community.

4.1.3 Incentives to schooling

The analysis quite predictably shows that the **distance between household and school** is strongly related to the likelihood of school participation of both boys and girls. Similar findings were made by Nielsen (1998), Canagarajah and Coulombe (1998), and Grootaert (1998). Figure 4.2 shows the reduction in school participation when the distance to school increases from the shortest (score 1) in the sample to the longest (score 4). The likelihood of school attendance drops from 50 to 32 percent – that is by 36 percent – for the youngest girls, and over 40 percent for the youngest boys. For 10-year olds participation likelihood drops by around 30 percent for both, while the impact is strengthened by age, particularly for girls, whose schooling likelihood is reduced to the half from age 14 on.

Figure 4.2 Predicted reduction in probability of school attendance for girls and boys by age when school distance is increased from less than one kilometer to more than two kilometers.



Again the impact on child labor migration is weak and only statistically significant for boys. Instead of increasing the relative importance of incentives to labor migration, the long distance to school also reduces the likelihood to leave altogether. In other words, children who live far away from school are more likely to stay and possibly work in and around their own households. (Coulombe (1998) and Nielsen (1998) both found that distance to school increases child labor, while some of Grootaerts (1998) findings can be

interpreted the same way.) Similar to those living in a community without regular markets, people who live in remote areas may have weaker networks and less information about migration options, and thus higher relocation costs.

4.2 Constraint

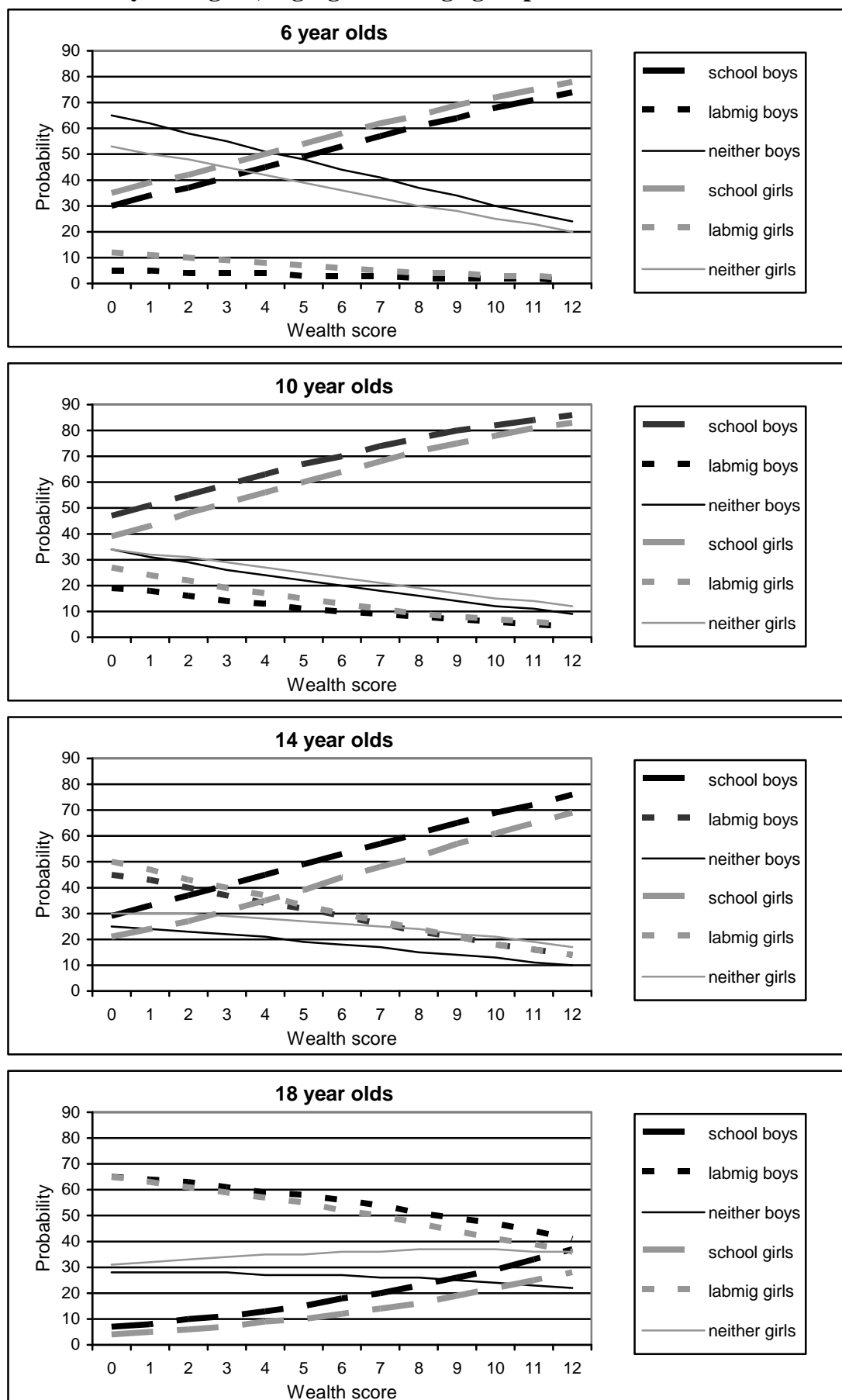
Do parents send their children on labor migration as a response to household poverty? The results of the analysis are not entirely in line with the hypothesis on constraint, and encourage further investigation.

4.2.1 Wealth

The wealth index shows the anticipated impact on both child labor migration and schooling by reducing the former and increasing the latter. But household wealth is far from being statistically significant in the case of boys' labor migration. Figure 4.3 shows the probability of schooling, labor migration and "neither" for children with different household wealth scores, grouped by age. Notably, the charts must be read keeping in mind that the impact shown on boys' labor migration is highly insecure.

Looking first at the 6-year-olds, school start for the youngest appears to be strongly influenced by the household wealth score. School attendance (read early enrollment in this case) is more than twice as high for both boys and girls with wealth score 10 compared to those with wealth score 0. Even among the poorest households, where the majority of children are found, increasing the household wealth score by only one point leads to an approximately 10 percent increase in the probability of attending school. The probability of labor migration is still fairly low in this age group, and for girls it is reduced to a quarter of the probability (from 12 to 3 percent) between wealth scores 0 and 10. The approximate 1 percent drop per additional wealth score represents an

Figure 4.3 The probability of schooling, labor migration and “neither”, on wealth score for boys and girls, segregated on age group.*



*NB! The effects on boys' labor migration are not statistically significant.

almost 10 percent reduced probability for labor migration for each wealth score added.

School drop-out is striking between ages 10 and 14, in particular among the poorest, and slightly more for girls. While school participation rates for the wealthiest boys drop by 13 percent in the four year period, the same effect for girls is a 17 percent drop. Among the poorest, both girls and boys school participation rates drop by 18 percent. Since school participation is generally lower for girls and the poor this means a stronger impact of poverty on school drop-out for these groups. Poor girls are particularly vulnerable as their school participation is halved between 10 and 14 years of age. Among the 14-year-olds three times as many girls are in school in the wealth score 10 group than in the wealth score 0 group.

The likelihood for 10-year-old girls to be on labor migration is already more than double of the 6-year-olds, and accelerates towards 50 percent for the poorest girls by age 14. The probability of being a labor migrant drops by about 3 percent per wealth score among the poorest households (scores 0-3), then by 2 percent for households between score 3 and 8, and one percent among the wealthiest. The drop per wealth score again represents about a 10 percent reduced probability of being a labor migrant.

Very few among the poorest 18-year-olds are in school. Even among the wealthiest in the sample, less than 30 percent of the boys and slightly more than 20 percent of the girls still study. As the figure shows, the impact of wealth on schooling in this age group is considerable, quadrupling the number of male students between wealth score 0 and 10, while the number of female students is more than five times higher.

By age 18 labor migration rates are suddenly much higher in the wealthiest households, while at earlier ages it remained fairly low. *In other words, there*

appears to be a lag in labor migration caused by wealth – the wealthier still leave, but tend to leave when they become older, presumably after many of them have completed secondary school.

Overall, the impact of wealth on the schooling choice is stronger and more distinct than on the child labor migration choice. The fact that wealth was not statistically significant for the choice of boys' labor migration suggests that whether a boy works around his own household or somewhere else is for many not primarily a question of constraint. Girls, on the other hand, become more systematically vulnerable to being sent away to work when household poverty increases, in particular around 14 years of age. The results suggest that there may be great qualitative differences between the various types of labor migration listed in section 3.3.3. Boys' labor migration may have more of an educational value, while for girls it may be more likely to represent crisis coping. Girls therefore seem more vulnerable to be "sacrificed" in times of crisis.

4.2.2 Credit

The impact of three types of credits were tested in the analysis: the informal tontine, the community funds and the most formalized credit arrangement CLCAM. The survey asks which form is most accessible to women in the village. It is therefore important to keep in mind that having better access to a community fund does not exclude the possibility that several other credit forms may coexist but be less accessible.

Nielsen (1998) found that formal credit generally had no impact on schooling but helped reduce child labor for both boys and girls. Informal credit showed no significant impact in the rural sub-sample, but in the gender segregated sub-samples also informal credit reduces child labor for both boys and girls. She also found that informal credit contributed to reduce the schooling of boys – a surprising finding that is confirmed in the following analysis.

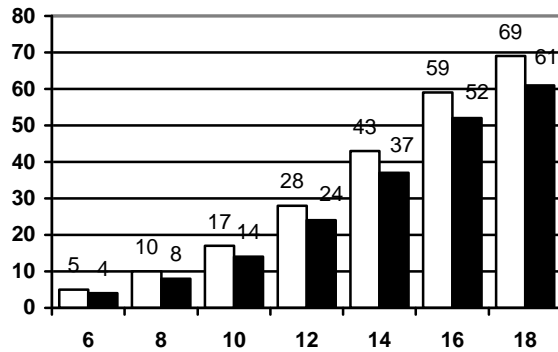
All three credit forms seem positively related to the labor migration of girls and in general negatively related to the labor migration of boys. The results, however, are only statistically significant in the case of the community fund for girls (positive), and the tontine and CLCAM for boys (negative). The impact on schooling is paradoxically similar: credits impact positively on girls schooling, but negatively on boys. CLCAM is not statistically significant for girls schooling, and community funds not for boys. This all indicate that the three credit forms have slightly different functions in the villages, and that their effects on relaxing poverty constraints are different for boys and girls: While increasing the share of boys working in and around their own households, they reduce the share of girls who do so.

Figure 4.4 shows reductions in probabilities within the group of all boys or all girls in the sample. Note that the text in the following paragraphs will refer to the percentage reduction *within* the group of boys or girls who migrate or within the group of school boys or school girls to give a better picture of the relative impact per age.

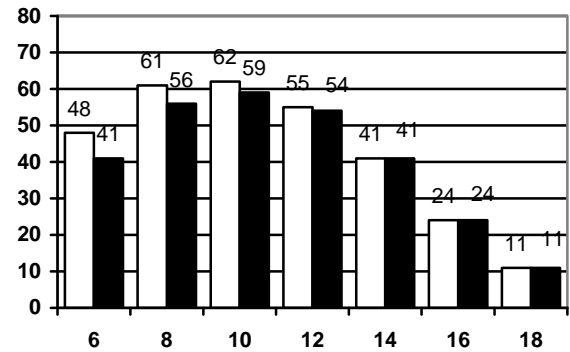
The tontine is statistically significant in reducing a boy's probability of being a labor migrant, but also reduces his probability of being in school, as shown in figure 4.4 chart A. The reduction in labor migration is of about one fifth for the youngest boys, and gradually decreases towards a 12 percent reduction for the oldest boys. Reduction in school attendance is more modest, of around 15 percent for the youngest boys, while the effect slowly disappears between 12 and 14 years of age and remains zero for the older age groups (figure 4.4 chart B). The 6 to 8-year-old girls' probability of schooling on the other hand *increases* by 7 to 8 percent, but this relatively modest effect gradually disappears towards 18 years of age. One could expect access to credit to be more important for the poorest, but the effects found are strikingly similar for rich and poor boys (wealth scores 10 versus 0). The only difference worth

Figure 4.4 Probability of child labor migration and schooling by age, on credit types available.

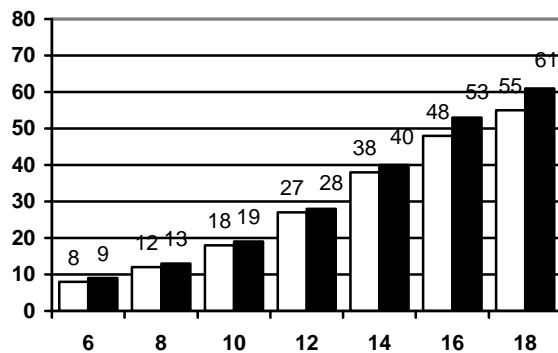
A. Boys labor migration and tontine



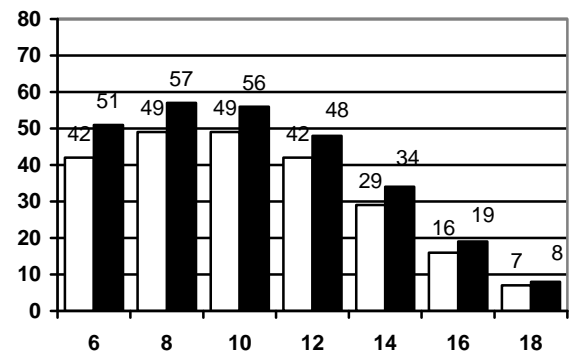
B. Boys schooling and tontine*



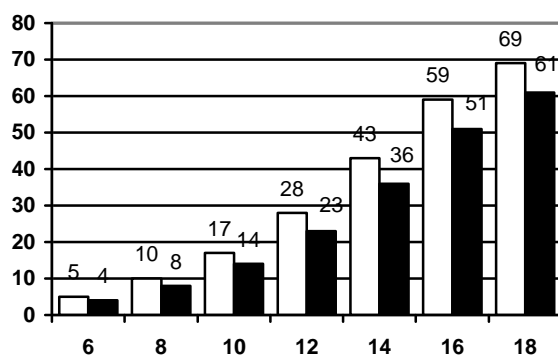
C. Girls labor migration and community fund



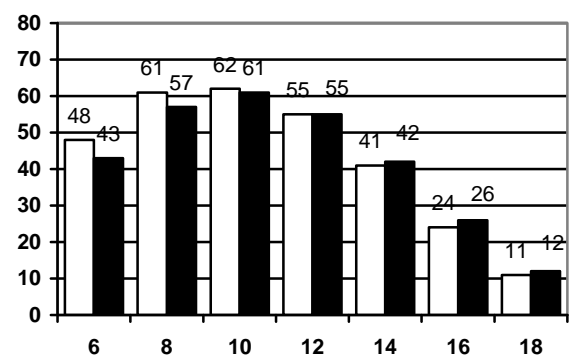
D. Girls schooling and community fund



E. Boys child labor migration and CLCAM



F. Boys schooling and CLCAM



□ Without credit type available

■ With credit type available

* The tontine was also positively related to girls schooling, but only at a .10 level and with moderate effect.

mentioning being that the negative impact from the tontine on schooling is slightly weaker among the wealthier boys.

The community fund only has an impact on girls, increasing both their labor migration and schooling probability. Figure 4.4 chart C shows that the increases in probability for girls' labor migration is relatively modest and constant for all age groups at around 10 percent. Schooling is more strongly positively affected; it increases girls' school participation by as much as 18 percent for the 6-year-olds, and remains around 14 percent higher for the other age groups as well (figure 4.4 chart D).

Comparing the impact of the community fund for rich and poor households, results show that it is mainly the poorest households that are negatively affected with regards to girls' labor migration. Only among wealthy 16 to 18-year-olds a slight increase in the probability of labor migration can be found. The positive impact of community funds on schooling is also stronger among the poor: a poor 8-year-old girl for instance faces a 16 percent reduced likelihood of attending school in a village without community fund, while a rich 8-year-old only faces a 7 percent reduction.

CLCAM, the most formalized form of credit, is only statistically significant for boys, and the effect is strikingly similar to the impact of the informal tontine: for the particular boy in our example the probability of being a labor migrant is reduced by one fifth for the two youngest groups, the impact falling gradually towards 12 percent for the oldest. The effect on schooling is less consistent. While CLCAM appears to reduce the school participation of the youngest boys, this effect disappears in the 12 year group, and turns positive from about 14 years of age. Similar to the tontine, the effect is about the same for wealthy and poor households, the poor boys' school attendance likelihood being slightly more sensitive to the presence of a community fund.

In conclusion, the share of boys who work in and around their own households increases in villages with the tontine and CLCAM, and this should be consistent with the suggestion that credits are invested in productive assets and thus increase domestic child labor demand, and therefore again is related to incentives. The reduction in boys' labor migration also signals that credits this way may help families avoid sending away boys as a crisis coping mechanism in times of dire constraints.

Girls are more vulnerable than boys to be taken out of school in situations of (binding) constraints. The tontine or community fund credit help retain girls in school during a crisis and help the household get back on its feet without necessitating actions that will lead to dis-saving of their human capital. Credit however has no desirable effect on reducing girls' labor migration, and this is counter-intuitive since household poverty constraints had such a strong impact on their labor migration probability. It is often assumed that credit to women is invested in assets or small businesses that require the help of their daughters – either in the business itself or in substituting for the woman in her daily household tasks. No evidence of this is found, to the contrary.

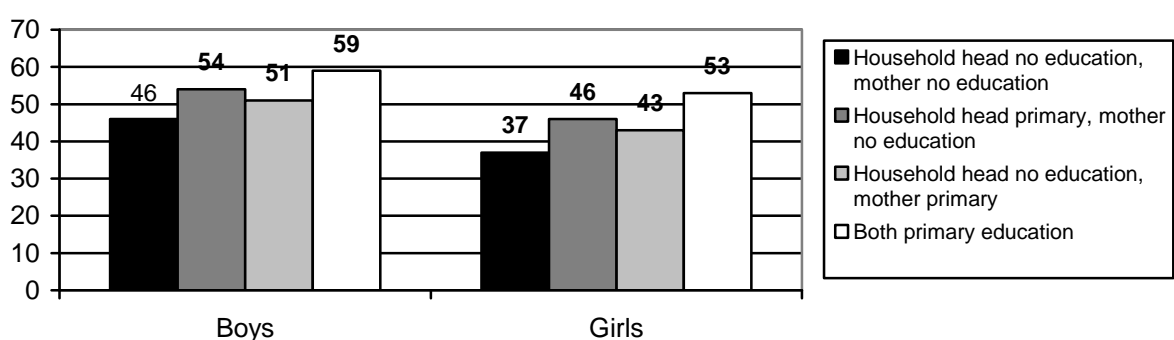
4.3 Agency

The most probable agents of the child's schooling and labor decision are mothers, fathers and/or household heads. How do their individual features and relative bargaining power affect the child labor migration and schooling decisions, other things held constant? Are mothers indeed more altruistic? Similar to what was found by Grootaert (1998), the regression shows that children go less to school in **female-headed households**. For the youngest children having a female household head leads to a decrease in school attendance by about 14 percent. The impact increases only slightly by age for

girls, while the impact for older boys (14-18 years of age) is as much as around a 25 percent drop as compared to male-headed households. There is no statistical significance of the gender of the household head on girls' labor migration. For boys, however, having a female household head drastically increases the probability of labor migration, especially for the youngest ones. While a 6-year-old in the standard male-headed household has a likelihood of labor migration of 4 percent, the likelihood increases to 6 percent (or by 50 percent) if the household head is female. For 12-year-olds the increase from 24 to 32 percent represents a 33 percent increased likelihood, while the effect then continues to drop towards age 18.

What is the effect of **agent education**? The data gives information about the education level of the mother and the household head. Both mother's and household head's education increases school participation probabilities for both boys and girls. This makes logical sense and is consistent with Nielsen (1998), Coulombe (1998), Canagarajah and Coulombe (1998) and Cockburn (2000). Figure 4.5 looks at some variations to the standard household.

Figure 4.5 Schooling probability of 12-year-old boys and girls and primary education of parents (in percent):



Results show the schooling probabilities of 12-year-olds depending on whether the agents have primary school (to keep it realistic, higher education is not considered here). In relative changes this means that the household head having primary education increases the likelihood for the 12-year-old boy of being in school by 17 percent, and for the 12-year-old girl by 24 percent. Mother having

primary education increases the likelihood of boys schooling by 11 percent and girls by 16 percent. Both agents having primary school improves the chance that the boy is in school by 28 percent and the girl by 43 percent. *Household head's education thus has a stronger impact than the education of the mother, and the impact of education of both household head and mother is strongest for girls.*

The education of the agents also affects the child labor migration probability, and with an interesting gender pattern: mother's education increases the likelihood that girls labor migrate, while the education of the household head increases the probability that boys do. The effects are relatively small, indicating that agent education first and foremost contributes to reduce the share of children who work or idle in and around their own households. For the boys the effect changes by age: having a household head that has completed primary school *reduces* the labor migration likelihood for the younger boys, while the likelihood *increases* in the oldest age group. *Thus it appears that the education of the household head leads to a delayed departure for the boys.* That the education of the household head contributes to reduce the probability that children work and idle around their own households would be consistent with Nielsen (1998), Cockburn (2000), and Bhalotra and Heady's (2001) findings for boys.

The impact of the **age of the agents** on children's schooling is interestingly almost non-existent. This was also found by Nkamleu and Kielland (2006), and by Couckburn (2000) for boys. For child labor migration, however, the trend is contrary to what was found for education. Similarly, while mother's education was found to increase the labor migration of girls, her age is found to *reduce* the labor migration of boys. While the education of the household head was found to increase the labor migration of boys, age is found to *reduce* the labor migration of girls. Seeing age and education only as bargaining power is obviously simplistic. In fact, the age of the household head may, as suggested

by Bhalotra and Tzannatos (2003:p49) also be an indicator of the child living in an inter-generational household where the child's grandfather, for instance is the household head. In the absence of other household composition variables (that were omitted because of the risk of endogeneity), the age of the household head may in this equation thus also carry the spurious effects of for instance having a high number of household members.

How about the impact? Again the case of 12-year-old boys and girls is examined. In the standard case, the mother is 37 years old and the household head 48. The impact of altering the age of the household head is negligible, and a 10 year reduction only increases the labor migration likelihood of girls by 1 percent. Altering the mother's age has a slightly stronger impact on the migration likelihood of boys: while a 30-year-old mother gives a labor migration likelihood of 27 percent, the son of a 50-year-old mother only has 19 percent likelihood of labor migrating. If women's bargaining power is indeed increasing by age, this can in fact be interpreted as a sign of maternal altruism towards – at least – sons, and if counting effects also at a 15 percent significance level also towards her daughters.

In conclusion, the features of the child's agents do matter for whether children labor migrate or go to school, but the effects are not systematic with regards to the assumption of women being more altruistic. Women were assumed to have a stronger bargaining power when educated, when older and when heading the household. Results, however, show that female-headed households have a higher propensity to send boys on labor migration. The likelihood of girls' labor migration increases with the mother's education, while child labor migration decreases with mother's age. The three findings call for individual interpretations. While only the last can be taken as an indication of maternal altruism, the fact that educated mothers send their daughters away call for further investigation. If certain types of labor migration are seen as desirable, it is possible that educated mothers have better social networks that can be used

to facilitate for the relocation and find the girls (better) jobs at a destination site. The tendency of female-headed household to not send children to school but send boys on labor migration, other things held constant, could of course be caused by limited maternal altruism. However, it could also be due to a relative vulnerability of these households, as suggested by Bhalotra and Tzannatos (2003:p43). As explained in section 1.3.3 this could be related to both an insufficient wealth measurement in the regression and to the other limitations placed on female-headed households that are common in traditional societies. When both educated household heads and educated mothers have a higher propensity to send their children away to work, this does, however, raise a very fundamental question: is child labor migration really as bad as suggested by the theoretical foundations for this paper?

4.4 Information

The regression equation also includes a variable measuring the information level in the community. Is ignorance about the risks indeed a reason why parents take the chance of sending children away to work? In the former section the positive impact from agent education on child labor migration would indicate otherwise.

The presence of a community radio, a media often used for public awareness rising, shows a highly gender-biased impact. While strongly reducing the probability of boys' migration, it simultaneously somewhat reduces the school participation of girls. In other words, the share of children staying to work or idle around their own households increases. The reason for this very uneven impact on boys' and girls' labor migration deserves further investigation.

4.5 Socio-cultural and demographic factors

Not surprisingly, the probability of both schooling and labor migration increases by **age**. Also, this increase is gradually weakened, as shown by the negative coefficients for age squared.

The religion and geography variables were mainly included in order to account for cultural variations. They also turn out to be very powerful, underscoring the variations of the child labor migration phenomenon across the country.

While **Muslim** children were found to be more likely to labor migrate than Christian children, they have about the same probability of going to school, controlling for geographical zone (Muslims mainly live in the north). The explanation for the high migration probability particularly among Muslim girls may be the requirement of bringing a dowry into the marriage. It is common for Muslim girls to earn this dowry as domestic servants in the southern cities of the country. The labor migration likelihood of a 16-year-old Muslim girl coming from the northern region is for instance 22 percent, while a Christian girl living in the same region would only have a probability of 15 percent, and an Animist girl 18 percent.

The **Animist** majority shows a much lower likelihood of attending school, while Animist boys are also less likely to migrate to work. The majority of Animists live in the center of the country (almost 60 percent of the children from the center are Animists), and this is also where the highest child labor migration figures are found. The fact that religion accounts for so little of this variation is interesting in itself.

Geography matters greatly in Benin, and the effect of being born in the central zone of the country is, as previously mentioned, very strong. The high labor migration figures quoted throughout this chapter are related to the fact that the

standard case analyzed in this thesis was placed in exactly this region. So, where the child is born combined with religion is extremely decisive for his or her destiny. Take a look at the case of the typical child in the South, Center and North. The Southern child is typically a Christian. By age 16 a boy has a 26 percent likelihood of having left home to work, while the girl has a 35 percent probability. The Central child is typically Animist and the Animist boy and girl in the Center both have a stunning 52 percent likelihood of being labor migrants by the time they are 16. The Muslim 16-year-old girl from the North, in comparison, has as previously stated a 22 percent probability of having left home to work, while the boy has an 18 percent likelihood.

5. Conclusions and policy recommendations

Demographic figures for most West African countries show that a high share of children live away from their parents. Time allocation studies reveal that, when not in school, non-biological children of the household head work more than the biological children. In addition, many working children do not live in regular households at all. They are therefore not accounted for when household surveys are used for analyzing the determinants of child labor.

Most earlier empirical research models aiming to explain child labor participation are based on household data that include a variable for whether a child is the biological child of the household head or not. This may help understand the role played by biological ties in determining whether a child will work in that particular household, but that's not the whole story. In fact, assuming that the household head is the decision maker on whether a child is to work or study is only partially correct. In the case of non-biological children, this decision is often made before the child arrives in the household. A smart child may be sent to another household to live closer to a school. An unfortunate child may be sent away from home to make money as a domestic servant. And even a very altruistic household head cannot send a 13-year old foster child to school if he or she has never earlier set foot in one.

This thesis concentrates on a particular type of child labor that is seldom considered: child labor performed by children who are separated from their family and away from their community. It is also different from previous child labor studies in that it primarily focuses on the **parental** decisions on labor and schooling, instead of the decision of the household head with which a child lives at the time of a survey. In addition, it takes into account **all** children who work away from the parental household in the child labor definition, including those that “regular” surveys would not cover, such as children in the street, or

working on plantations away from home, or simply living in a household that “forgets” to mention them to interviewers

The theoretical approach for the analysis presented is based on three core hypotheses used to explain child labor, as presented by Bhalotra and Tzannatos (2003). First, the importance of **incentives** to schooling, work in the local community and labor migration were considered. Second, indicators of household poverty **constraints** and the availability of credit that could help relax such constraints were analyzed. Third, features of the **agents** presumed to make the decision on behalf of (or together with) the child were examined.

5.1 Findings

When child labor migration is regressed on indicators of incentives, constraint and agency, the results are only partially consistent with the theory. On some points, the expected effects are absent; on others, results are contrary to what the theory predicts. In general, the theory turned out to be better suited to explain schooling likelihood than child labor and child labor migration probabilities.

As predicted, indicators of child labor demand in the local community (amount of farm land, cash crop production and livestock) work systematically as disincentives for going to school. While they generally did increase the share of children who work in and around their own households, they did not have the anticipated effect on retaining children from migrating to work. Instead, a rural community being highly dependent on agriculture appears as a disincentive for girls to stay. While fetching water greatly occupies rural children across Africa, the availability of piped water or a village pump surprisingly led to a reduction of the share of girls who attended school, and also a reduction of the probability that boys labor migrated. The former remains hard to explain, while

the latter may be explained by water facilities being a proxy for a somewhat higher level of development in the community. The same goes for the presence of village markets, which instead of increasing local child labor leads to more schooling for both boys and girls. The fact that markets also increase girls' labor migration may be explained by markets also being a place where jobs and transportation are mediated, as well as where information about opportunities elsewhere is shared. In this sense, markets are places where not only goods are traded, but also information and jobs, the latter two depending on social rather than financial capital. A high share of fathers living elsewhere does not seem to facilitate chain migration, as was assumed. Instead, migrant fathers may through their transfers contribute to the schooling of boys. Living far away from school reduces the likelihood of schooling, but does not increase labor migration.

While poverty definitely seemed to increase the likelihood of girls migrating, it did not have the same systematic impact on boys. Child labor research that has not taken child labor migration into account has been puzzled by the relatively moderate impact that poverty appears to have on child labor. The findings here, however, indicate that if the two child labor choices – child labor in the home community and child labor away from home – were added up and regressed on poverty, the impact of poverty could turn out to be both stronger and more statistically significant for both genders.

Curiously, the availability of credit did nothing to reduce child labor migration, suggesting that credit is either inaccessible to the poorest households, or insufficient to compensate for the opportunity cost of keeping a girl at home – even if she works. Credit did, however, help increase girls' school participation. Not so for boys. While poverty reduces their likelihood to attend school, credit leads to a further reduction in school attendance instead of counteracting the poverty effect. Credit availability also reduces the probability

that boys labor migrate. In this case credit is possibly invested in assets that are labor intensive for boys, such as livestock or land.

Agency issues are complex to interpret, and different for boys and girls. Girls are at higher risk of labor migration if coming from households with educated mothers, and at lower risk when coming from households with an older household head. Boys are at higher risk for labor migration when the household head is educated and at lower risk when the mother is older. Boys from female-headed households are also at high risk. The education of both mother and household head not surprisingly has a positive impact on the schooling probability of both boys and girls, and the impact is strongest for girls, but all children face reduced schooling probabilities when the household head is a woman. The different preferences of agents with different features, other things held constant, do not necessarily have to do with relative altruism. Educated agents may, for instance, be better informed about the pros and cons of the various options available to their children and therefore make different choices. In that respect, it is remarkable that educated parents seem to prefer child labor migration over having children staying to work or idle around the household. Very slim support is found for the notion that mothers are more altruistic than fathers. The fact that older mothers, who presumably have more bargaining power, are less likely to send children away could be interpreted this way. If the absent fathers are not overwhelmingly migrants financing their sons' education, the higher schooling likelihood of boys in such households could of course also be a result of maternal altruism. But all this is highly speculative, and deserves further investigation.

Socio-cultural indicators like geography and religion are important in Benin, in particular the former. By far the highest share of children who are labor migrants comes from the central region. Muslim children, especially girls, are also at heightened risk, followed by Christians, while Animist children have the lowest likelihood of labor migration.

5.2 Some possible explanations

There may be methodological causes for some of the unexpected findings. Adding more community infrastructure variables to the regression equation and improving wealth and income measurements could perhaps exclude the possibility that some of the findings result from spurious correlations.

But there may also be more fundamental reasons why theory appears to fit reality only partially: the theory may have mis-specified the issue the same way that child labor issues may be mis-specified throughout the literature. Two main topics deserve to be considered in this context, and they interact with each other.

First, categorizing children is difficult. Children with some common features may be organized in groups that turn out to be highly heterogeneous internally. The case of non-biological children of the household head has been mentioned: it groups children in educational fostering together with child domestic servants. Most operational child labor definitions also mix apples and oranges in similar ways: older children earning some cash for their own non-essential consumption are mixed with child domestics who slave 24/7 without a salary. A child apprentice who feels privileged and loves his work is in the same group as a boy weeding the household subsistence farm, learning no marketable skills and controlling none of the returns to his own work. Even school children are an internally heterogeneous group: children in quality schools are grouped with those sitting on the floor in hot and dusty mud-huts with teachers who show up on an irregular basis. While certain types of child labor migration may be clearly inferior to the first type of schooling, the natural priorities of the schooling versus labor migration choice may be less clear in the latter case.

Child labor migrants are likely to be more vulnerable because they often leave the safety nets of their families and kin behind. Yet, in spite of this

commonality, the various labor migration arrangements discussed in section 3.3.3 are qualitatively very different. Some of the children who migrate to work will indisputably be better off after relocation, both with regards to living standards and future prospects. The various determinants of the analysis in this thesis are therefore likely to affect the different types of labor migration choices differently.

Second, rural parents in West Africa do not necessarily share the western normative perceptions of their children's options that form the theory on which this paper is based. In fact, most child labor research takes as a point of departure the assumption that child labor is bad and schooling desirable. As discussed in section 1.3.3, altruism is truly relative and reflects both the values and information level of the subject. Rural parents in Africa may well be ill-informed. They are for instance likely to be unaware of the long-term health consequences of certain types of work common for labor migrants, and to underestimate the risks of sending a young child alone to Côte d'Ivoire or Gabon. But western scholars may be ill-informed as well. The surprise expressed by those finding that orphanhood increases idling rather than child labor most likely reflects their underestimation of the value of work where schooling is not an option, income is essential, and jobs are few.

Blinded by perceptions of work as undesirable, most theories therefore assume that altruistic parents would choose school if they could afford to. The mere thought of the risks associated with sending off a 12-year-old to work abroad would make most westerners cringe. But while they stress the risks of leaving, they may ignore the risks of staying: some rural areas in Africa are indeed so risky and destitute that getting the child out of there becomes a priority for loving parents and any risk associated with leaving is well worth the simultaneous increase in opportunities. It can be as simple as the answer given by northern Ghanaian children when asked about the best part of their labor migration to cocoa farms: there is always enough to eat.⁶²

Parents and other agents are not only likely to value labor migration different from western scholars, but they also probably see more nuances both to their own situation and to their options. They are therefore also likely to value the various types of labor migration quite differently vis-à-vis the available versions of the three other options: schooling, staying home to work or just idle around their own households. Many types of labor migration will be seen as more attractive than staying home to work, and a few may even be regarded as better options than the available schooling choice.

Presenting all child labor migrants as one group thus conceals important internal variations. The effects measured in some coefficients may actually relate to only certain types of child labor migration. As a very simple example: the negative impact of wealth on girls' labor migration may in fact represent a reduction only in "undesirable" types of migration, like child domestic servitude with low salary among strangers. When mother's education on the other hand increases the labor migration of girls, this could reflect an increase in the more positive forms, for instance certain types of apprenticeship fostering.

Variation between the quality of labor migration types may also explain some of the variations in the coefficients for boys and girls, alongside the different ambitions typically held for the two genders and the value they represent to the kinship network. If sending girls off to work is a response to poverty constraint this may mean that girls are more vulnerable to be expelled in times of crisis because they are "easier to sacrifice", or that labor migration arrangement for girls are in general more risky and less desirable, and that they are thus only chosen when constraints impose them.

5.3 Policy implications

Do child labor migrants deserve public protection? The answer is yes. Even though not all may be needing it, the vulnerability of many and the costs their ill fortune has to society in terms of reduced human and social capital legitimizes interventions of some sort. However, designing good interventions has proven difficult, and the golden rule for policy interventions targeting a complex social phenomenon like this is to ensure that the interventions cause a minimum of unintended harm, while actually having a positive impact for the many.

Social science research often reveals the complexity of life. Policymaking, on the other hand, can not afford much complexity, particularly not in a poor country like Benin. Sometimes policy makers (and their foreign advisors) may be too eager to simplify their messages. Driven by international agendas and protected by their ignorance of local complexities, they may overlook the potential negative impact that projects may have to the many non-typical cases of a phenomenon.

As Castle and Diarra (2002) have shown (discussed in section 1.2), this concern is highly relevant in the case of what has generally been labeled “child trafficking” in the West African region. Failure to see the distinctions has most likely led to negative consequences for many children because criminalizing their relocation made it more risky, and therefore raised its cost to the children and their families. False documents had to be purchased from crooks. Good helpers were scared off, leaving the arena to the bad ones. Social safety nets of fellow expatriates in the destination sites were discouraged from helping the children in fear of being suspected of intermediation. Good employers were deterred, and bad ones took over. People were encouraged to report on each other. Finally, some of those given power through the projects have gained an

opportunity to earn bribes, and thus alienated the projects even further from the population.

A two way communication process is needed in order to lay the ground for a policy that is efficient while causing a minimum of harm to children whose labor migration does not involve a welfare concern. A common ground must be reached where a policy that is well informed but simultaneously easy to understand locally can be formulated. Both policy makers and local populations must be open and willing to change their perceptions during such a process. And they should be, if the common goal is made clear: everybody wants healthy, smart and well adjusted children. When child labor migration jeopardizes this goal there should be a joint interest in finding a solution. Communication is costly, but is one of the main requirements for success.

How can the research of this thesis help the Benin Government and the children at risk? The study is mainly helpful in informing preventive efforts, since it focuses on the determinants for the decision to migrate rather than on working conditions in the destination sites. In the first place, a better understanding of the conditions likely to trigger child labor migration can help identify high-risk communities and households, and therefore target efforts. This is always a concern when resources are far from sufficient to cover needs. Also, improved information will help outside actors establish a constructive dialogue with local stakeholders (at-risk households, village leaders, social communicators, and the community at large). Knowledge can help formulate the right questions, as illustrated by the examples below.

In a superficial discussion in an African village, the main concern brought up is likely to be the evident poverty of the place. It is then helpful to know that while poverty is probably an important determinant of some of girls' labor migration, something beyond marginal variations to local wealth must explain the labor migration of boys. Identifying relevant **social policy** interventions

therefore needs further research and local discussion. A fashionable response to all sorts of rural poverty issues is the introduction of micro-finance programs. However, research findings suggest that credit accessibility does not limit girls' labor migration but actually seems to increase it. Moreover, both the tontine and CLCAM seem to reduce boys' schooling. Therefore, before micro-finance schemes are introduced or expanded, it is important to probe this issue further. Is credit likely to be invested in labor-demanding assets and businesses that will encourage parents to keep boys away from school to work? Are girls going to be sent away to work? Before supporting more micro-finance programs the dynamics linking access to credit and child labor migration, in that particular community and in general, should be well understood to avoid unwanted negative effects on children.

If credit is not an adequate tool for reducing the poverty-induced labor migration of girls, then what might be? A better understanding of the types of girls' labor migration that are triggered by poverty would certainly help answer that question. If girls are sent into hazardous labor arrangements as a crisis coping mechanism for the household, the local safety nets must be strengthened to provide alternatives and protect girls from being "sacrificed". If sending the girls off is not the last resort, sensitization and attitude campaigns may be more appropriate.

Boys labor migration was reduced when credits were available, but not to the benefit of schooling. While working at home should be less risky than working away from home, the impact is still not desirable. But why is boys' labor migration insensitive to poverty? If not a crisis coping option, then what? During a visit to the Central region of Zou the issue was brought up with a group of parents in the village of Zakpota. As usual, local poverty was blamed, but when the results of this survey were explained, a different voice was raised. *"If you don't have a son in Cote d'Ivoire you don't count in this village,"* said the peasant. Qualified and well informed questions are needed in order to bring

up such perspectives in the local dialogues. It is possible that some types of child labor migration resemble what is well known for adult migration: they are status symbols, signaling strength of character, hope and prosperity (“those who are strong enough, leave”). A ticket to the lottery.

Schooling availability did not appear to have much of an impact on child labor migration. Issues related to school cost (official and non-official fees) and quality (infrastructure, curriculum relevance), and other factors that may increase the attractiveness of the schooling option relative to the child labor migration option should be further assessed and discussed to derive recommendations for **education policy**. Compulsory schooling could be considered once enough schools are in place with sufficient capacity to offer good quality education to all children. So could conditional cash transfer programs when child labor migration is a reaction to economic distress.

Local work opportunities in agriculture did not seem to retain children from labor migration. To the contrary, they appear to be dis-incentives for staying on. To policy makers this should primarily be an argument for targeting the most agricultural based communities. The finding that local markets appear to be recruitment grounds for girl migrants suggests that information campaigns should target village markets. It is conceivable, for example, to set-up mobile teams that would visit communities on market day. Even where there is a daily market, there tends to be one day each week when affluence is greatest.

Some central parental agency issues deserve to be scrutinized in the local dialogue. What types of vulnerabilities, beyond poverty, appear to be the negative triggers in female-headed households, and how can these households be helped to become less vulnerable? Why is it that mothers with some education prefer to send their daughters on labor migration? And is the labor migration of the daughters of mothers with primary education of a better quality (i.e., less harmful) than the labor migration of the daughters of mothers

without education, so that only the latter should be targeted for prevention? The same questions are valid for the labor migration of boys triggered by the education of household heads. If indeed better educated parents are more likely to send children away to be exposed to detrimental work and other risks, it is more difficult to excuse their decision by ignorance. But only after further exploring their decisions and the labor conditions of their children should **legal regulations** be considered.

5.4 Recommendations for further research

The objective of the Benin child relocation survey was to enable policy makers to quantify child labor migration and child trafficking in the country, identify the areas most at risk, and develop an understanding of the reasons behind these phenomena. The survey certainly served as an eye-opener as extrapolations indicated that around 50,000 Beninese children at that time were working outside the borders of the country, and a similar number had relocated to work in urban areas within the country. In 2000 it was a surprise to find that the main share of the migrants came from the central region, since most children intercepted at the frontiers were from the south. Check points, however were also mainly in the south, something that would explain the misperception.

The new information obtained also gives some general ideas about the determinants of child labor migrations. But above all the survey and the analysis presented in this thesis raise a range of new questions. These questions should guide and inform a dialogue between Government and local communities and households at risk, as suggested in the previous section. A well informed dialogue will provide new understanding, but new qualitative findings should again be quantitatively examined. An extended second survey

would be expensive, but would be worth the investment if it could lead to more adequate and better targeted interventions.

This thesis suggests several issues that could help improve future child labor research, in Benin and elsewhere. The recommendations can be classified in five categories as follows.

1. Improving the operational definition of child labor

- a. An extended operational definition of child labor should be developed. The issues of child labor migration and home-based child labor should be treated in conjunction: no child labor survey is complete if it does not also cover the parental choice of sending a child away to work. And a child labor migration survey also needs to take stock of home-based labor opportunities in order to understand parental priorities and thus the labor migration choice.

2. Identifying variations within the main outcome categories

- a. What are the main types of child labor available in the local communities? Lessons in categorization can be drawn from existing time allocation surveys. The pros and cons of each type should be identified and rated by representatives of the local communities, including returns in cash, kind or educational value and the perceived associated risks.
- b. Similarly, the main categories of child labor migration should be identified and rated by local representatives.
- c. Improved information on school costs and quality is needed. How is the quality of local school buildings? How do parents rate curriculum relevance? What is the teacher per child ratio? How good and assiduous are the teachers? Is the school private or public? What types of school-related expenses do parents incur?

- d. How do parents perceive the children that are reported as neither working nor going to school? Is it leisure, laziness, unemployment or hidden work in their opinion?
- e. In short, what different labor, labor migration, schooling and leisure options does the individual household perceive for its children, and how does it rate these options? Hopefully, this type of information will help policymakers understand how incentives to schooling can be improved relative to the various other options for the use of children's time.

3. Understanding costs, risks and opportunities related to child relocation

- a. What are the relocation costs when a child migrates to work? Do parents send money with the departing child, and do they have other expenses related to the child's departure? Do they pay for transportation? Does the child know people or have relatives at the destination site? Did the child have a specific job to go to when leaving?
- b. What sort of risks do the parents foresee when a child is to relocate, and how are these risks perceived relative to the risks of staying?
- c. What are the longer term benefits and opportunities envisioned when a child is sent on labor migration?
- d. Are there other push factors in the home community that need to be considered when analyzing the child labor migration choice?

4. Understanding wealth and endogeneity issues

- a. In order to better understand endogeneity issues, transfers between parents and the various types of child labor migrants should be mapped. Transfers can go both ways and can be in cash or kind. They can take place on a monthly, seasonal or random basis, or in situations of special need.

- b. Ideally a full consumption module could be added to the future survey in order to study the ratio of child-related versus adult-related expenditures in the various income categories. As a minimum, indicators of household alcohol and tobacco consumption could be included to better assess hypotheses of parental altruism.
- c. A set of survey questions that could serve as instrument variables for a less endogenous wealth/income assessment should be defined and included.
- d. The whereabouts of fathers who are absent from the maternal household and their relationship to migrant (and home-based) children should be clarified. How many fathers are labor migrants? Are there transfers in cash or kind from the absent fathers to the maternal households?
- e. Beyond knowing what type of credit is available in a community, it is important to know whether anyone in the household had used such credit, and if yes, what for.

5. Reducing the likelihood of spurious correlations

- a. Including good community infrastructure variables could help ensure that the results on variables indicating both incentives (e.g., markets and access to water) and constraint (wealth measurements and credit availability), are not actually expressions of community level features unaccounted for in the equation.
- b. Similarly, agency features (especially female household head) may have spurious correlations with poverty and vulnerability issues unaccounted for in current wealth and income measurements. Communication with at-risk communities could help reveal what types of vulnerabilities this might be.

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Endnotes

¹ These are household data, and children living outside regular households are not counted here. There are some street children in Benin, yet others live in workshops, at commercial farms, in Koranic schools and boarding schools, etc. and these would not be included.

² For the purpose of this thesis the category was defined as a child between 6 and 17 who is either married to the household head, married to someone else in the household, grandchild of the household head, brother or sister of the household head or his/her spouse or some other member of the household, has a more remote or no relationship to the household head. Children classified as household head, child of household head, child of a spouse or of other household member were counted as living at home. The category “child of some other member of the household” organizes before the “grandchild” category, and it is therefore likely that if the mother or father lives in the household, the child would not have been assigned the value of “grandchild”. The classification characterizes 24 percent of the working children as “non-school, non-biological children of the household head”.

³ Kielland and Ouensavi (2000).

⁴ See argument by Castle and Diarra (2002).

⁵ This will be further explored in section 2.1.1.

⁶ They mainly work as domestic servants in private and relatively poor households, or for small farmers.

⁷ BBC Focus on Africa, July – September 2001.

⁸ CNN, April 15, 2001. The so-called “Etireno Slave Ship” was one among many passenger boats that also bring prospective child domestic servants from Benin to Gabon.

⁹ Reynolds (1991) for instance finds that girls preparing lunch was not counted even by the girls themselves when reporting on their labor activities.

¹⁰ Nielsen (1998) includes indicators of distance both measured in km and minutes, and finds that the coefficients for the two take opposite directions. It raises the question of whether issues of multi-colinearity may be involved when two such similar indicators are included in the same equation.

¹¹ Grootaert (1998) argues for using a sequential probit model to assess child labor, analyzing first the schooling choice, then excluding the children who only go to school from the sample before analyzing the choice of combining school with work, excluding those doing both before finally analyzing the work choice in comparison to being inactive. One of his arguments for the sequential probit is that irrelevant variables can be excluded in certain steps of the procedure. He thus excludes variables of schooling costs and distance from the “only work” equation. In comparison he includes multinomial logistic regression analyses (that he finds inferior to the sequential probit approach) in the appendix of his paper. Ironically, both school costs and distance turn out to be statistically significant to the child labor choice in those regressions, seriously questioning his assumption of their irrelevance.

¹² The presence of public transport could of course also serve as a relatively strong proxy of community infrastructure.

¹³ The probit model moreover predicts best when the outcome distribution is fifty-fifty, and therefore consistently under-predicts the incidence of child labor where it is not too common.

¹⁴ Grootaert (1998:pp29-30) does not find it appropriate to include an income variable in the child labor equation, admitting the likelihood of endogeneity. Nevertheless, his

poverty dummy is, as pointed out by Bhalotra and Heady (2001:p5, footnote 6) of course endogenous as well. The low impact found may therefore be related to endogeneity issues.

¹⁵ Hamilton's rule is (in brief) that a costly action should be performed if; $C < R \times B$ where C is the cost to the actor, R the genetic relatedness between the actor and the recipient and B is the benefit to the recipient.

¹⁶ There is no page number on the Abstract page.

¹⁷ See ILO; Every Child Counts (2003), and Investing in Every Child (2004).

¹⁸ ILO Convention 182, article 4d.

¹⁹ While labor market research is mainly concerned with productivity, child labor research is mainly concerned with welfare consequences for children. In that context, carrying water to livestock and carrying water for household consumption makes little difference to the child in question.

²⁰ In Kielland and Tovo (2006) we propose a list of 35 factors that can make any labor situation harmful to children. In addition to some more commonly used indicators of the nature of work and the labor situation; features of the child – like health condition – are calculated in.

²¹ Full name: UN Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children to the UN Convention against Transnational Organized Crime.

²² For a broader discussion of the definition, see UNICEF, ICDC (2004).

²³ U.S. Department of State (2005).

²⁴ In the new cocoa certification surveys on child labor in Ghana and Cote d'Ivoire some general indicators of force and deception, debt bondage and deprivation of freedom of movement are included.

²⁵ A notable exception is the econometric work on bargaining models and child agency of Vegard Iversen (2002a).

²⁶ Bhalotra and Heady (2001) use both "number of hours worked" and "labor participation" as dependent variables, and find the regression results to be strikingly similar. Labor participation thus seems to be a good proxy in the identification of determinants that trigger the types of child labor that should be a welfare concern.

²⁷ As concrete examples of this, a Beninese family may consider it more important to pay for a spectacular funeral ceremony or commemoration for an important relative, than to pay school tuition for a child, since such ceremonies are of high importance in the country, and the social pressure is often very strong.

²⁸ An interesting example of this is Pakistan where children were often placed in debt bondage because families needed to borrow money to organize lavish weddings for an older son. Social pressure for these very costly events was such that the Government decided to prohibit food serving in weddings, that way relaxing the financial expectation on poor parents and resolving much of the child bondage problem.

²⁹ Examples of such dis-saving of human capital is typically to eat less, take the children out of school, and/or involve adults or children in risky or harmful labor.

³⁰ Several NGO reports have referred to negative schooling effects among children of mothers who have received micro credit or support for income generating activities (IGAs). See e.g. Bozzari (2003) from Niger.

³¹ For example: the eastern city of Porto Novo in Benin is a destination site for Togolese child domestics. When rumor spread that salary for child domestics had increased by approximately CFA 1000 in Lagos (on the other side of the Nigerian

border) migration flows going *through* Porto Novo towards Lagos increased. It is also likely that more children left home when salaries increased.

³² E.g. a rural girl from Ghana tells Beauchemin (1999) that she would rather sleep in the street in a city than to stay in the countryside under the life conditions there.

³³ Castle and Diarra (2002) quote a Babmbara proverb “*Ni tara tounkala, ni ma fen soro, i be fen ye, i be fen don*”, meaning: If you go on labor migration, even if you don’t get rich, you will see something, you will learn something.

³⁴ There was a random sampling of rural communities in each of the 6 departments of the country, and a systematic over-sampling of areas that were pre-defined as potential risk zones (extrapolations referred to in 1.1.4 were later corrected for sampling biases). In each community households were randomly selected, and all mothers in each household were asked to report on their children, regardless of the mother’s status in the household or relationship to household head. Efforts were also made to capture children of deceased mothers who had been belonging to the household, by asking at least two other mothers to report on the whereabouts of their children.

³⁵ In Benin the four levels of organizing population groups are villages, communes, sous-prefectures and departments. At the time of the survey there were 6 departments, there are today 12.

³⁶ Ninety-two percent of 0-2-year-olds and 73 percent of 3-5-year-old children of separated parents live with their mothers (DHS 2001). Beninese law does not grant women the right to their children in case of separation unless the parents’ marriage was legally formalized. When it is not, men have the customary claim. Even when marriages are formalized (which is quite rare) women do not often use the legal system to compete for custody.

³⁷ Evidence of the statistical impact on schooling stemming from the absence of a mother relative to a father is presented e.g. by Case et al’s (2002) in depth analysis of country data from 19 DHS studies in 10 African countries. Moreover, Alderman et al (1995), Ilahi (2000), Quisumbing and Maluccio (1999) note that the increased bargaining power of women in a household correlates positively with children’s schooling as well as other child consumption. See also Cockburn 2000.

³⁸ ILO Convention 182 and related documents like “Every Child Counts” suggests type and duration of work by age bracket to define what constitutes child labor.

³⁹ Applying three different measurement instruments in her observations of child labor in the Zambezi Valley, Reynolds (1991) finds that girls themselves often underreport their work, while their brother’s had sometimes registered the activities that their sisters’ had left out in their diary notes.

⁴⁰ In particular, many girls go from Benin to Gabon to be domestic servants, since in Gabon almost all children are in school. Studies have revealed that the children who stay with ex pat Beninese families are not more protected than those staying in Gabonese homes. To the contrary, they seem to be treated worse by their own kinsmen (Fannou-Ako and Adihou. (1999)).

⁴¹ The estimates were prepared for a presentation made at the World Bank. The presentation can be obtained upon request.

⁴² The salary of a child domestic servant in Gabon is for instance equivalent to the wages of an average civil servant in Benin (Fannou-Ako and Adihou (1999)).

⁴³ In fact, the dataset contains a question about household savings, and also one about expenditures for traditional ceremonies, but due to the problems explained, these are not considered reliable, and thus omitted in the analysis.

⁴⁴ In relation to this study the author had a discussion about the relative importance of the various indicators with Beninese consultant Martine de Souza who has considerable field experience with the type of households in question. The final decisions are in other words also informed by this consultation.

⁴⁵ Table 3.2 shows that half the households fall in the upper category, but these are of course households with few children. Contrary to the other indicators that give reasonably equal results for children and households, this way of dividing the rooms-per-child brackets divide the children – the main unit of analysis - into three relatively equal groups.

⁴⁶ Both fertility and room size are admittedly potentially endogenous in a child labor migration regression, but should be less critical when included as a minor part of an index.

⁴⁷ In Benin, a rural girl 6-17 years old spend on average slightly more than 1 hour per day fetching water, a rural boy on average slightly less than half-an-hour.

⁴⁸ This is common e.g. in construction, for carpenters, tailors, mechanics and hairdressers.

⁴⁹ See Plan Togo's "For the Price of a Bike" report.

⁵⁰ The general term for this type of arrangement is ROSCA: rotating savings and credits associations.

⁵¹ Having a female household head may e.g. affect credit access, job opportunity and social participation.

⁵² In this case the rank is counted only among children currently 0-18 years old, starting with the youngest, and should be less endogenous than e.g. "total number of children" and certain other fertility measurements.

⁵³ Sample sizes are also small for many of the smaller ethnic groups.

⁵⁴ North is defined as the two northern departments of Atacora and Borgou, Central as the department of Zou, and South as the remaining three departments Oueme, Mono and Atlantique.

⁵⁵ The possibility of endogeneity is of course also present here (buying more cattle because there are children available to herd them and the return to child labor can be used on buying more cattle for them to herd), but would have been particularly so if considering the effect of individual household livestock ownership.

⁵⁶ In neighboring Togo an inversed u-shaped relationship was found between the distance to water and children's participation in fetching it.

⁵⁷ Also: the water policy in Benin requires villages to contribute 100.000 CFA before coming to do a borehole, so the poorest and smallest villages would not have a one.

⁵⁸ In conversations parents often complained to us that the children felt too good for farming as soon as they had learned French.

⁵⁹ One such cultural feature may be the demand for girls to earn a dowry.

⁶⁰ The author's local assistant was constantly approached by mothers and girls when we were visiting local markets in the center and north. Out of habit, she would stop to negotiate and review the girl the same way she would with other potential bargains presented to her. As is common in urban areas, she normally has at least two girls staying with her to help out in her store and household.

⁶¹ This was for instance found in northern Mali, and has been referred to in World Bank poverty assessments for the country.

⁶² See report from Department of Social Work, University of Ghana (2007).
